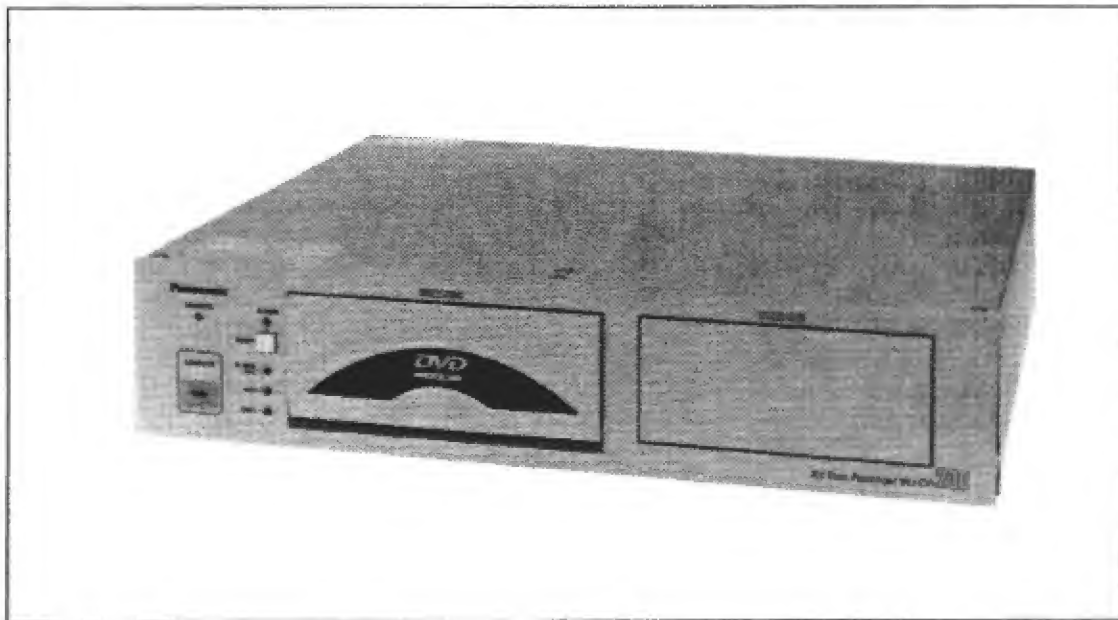


Operating Instructions

AV Disc Recorder
WJ-DR200

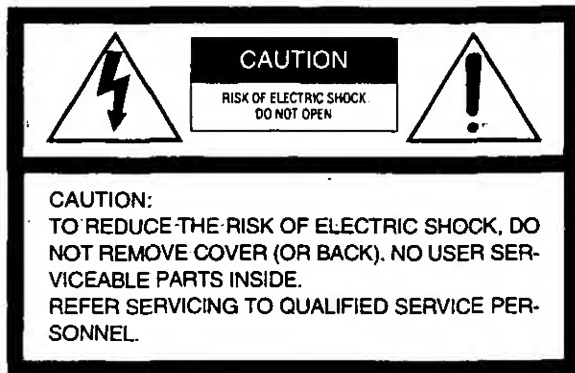


Panasonic®

Before attempting to connect or operate this product, please read these instructions completely.

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SA 1965

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



SA 1966

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For U.S.A.

Warning:

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

The serial number of this product may be found on the rear of the unit.

You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

WARNING:

TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

PREFACE

The WJ-DR200 AV Disc Recorder is designed to record freeze pictures on the mass optical disc (DVD-RAM). It enables record up to 28 000 freeze pictures (at 720 * 480 FINE mode) on a disc, and record it automatically with the associated alarm sensor.

FEATURES

- **Records distinct freeze picture**

It enables to record none blurring freeze pictures by use of 3D Scan Convert Method. It achieves twice as vertical resolution as legally VCR picture.

- **Records important scene without omission**

There are three kinds of recording modes shown below. It enables to record important scene without omission by setup to meet your requirement.

Single Shot Record: Records a freeze picture at once.

Multiple Shot Record: Records multiple freeze pictures continuously at once.

Time Lapse Record: Records a freeze picture at regular intervals.

- **Easy to search the recorded pictures**

Use of three search modes enable to search the picture to be displayed on the monitor easily.

List Search Mode: Enables search by the list that is displayed recorded date and time.

Thumbnail Search Mode: Enables search by the thumbnail screen that is displayed recorded picture.

Direct Search Mode: Specifies the picture directly to select date and time or recorded numbers.

- **Other various functions**

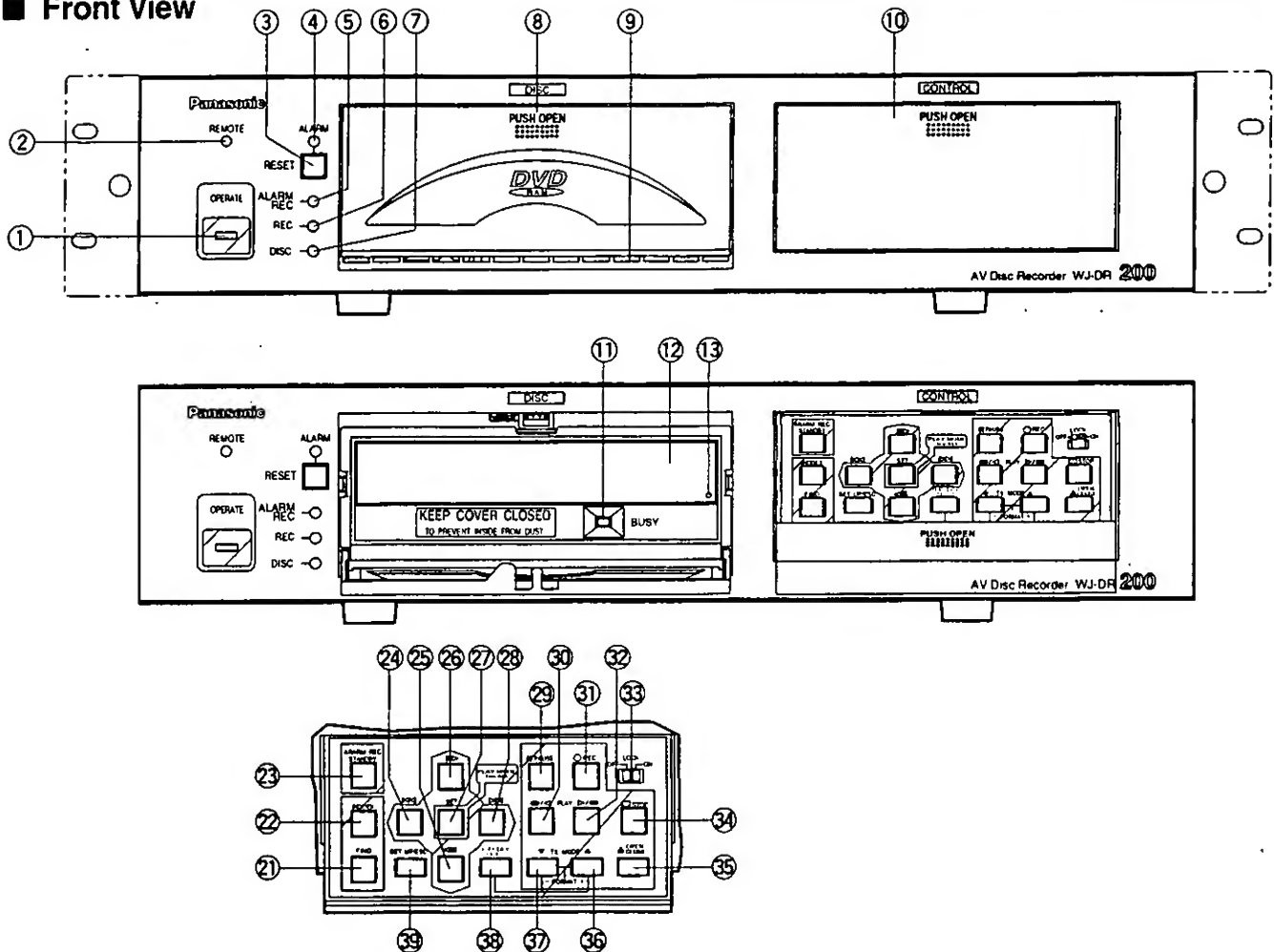
- It enables to set up recording according to the time of day and day of the week by programming timer internally.
- It enables recording two videos equipped with two video inputs.
- It enables recording continuously when the two Disc Recorders are connected in series.

PRECAUTIONS

- **Refer all work related to the installation of this product to qualified service personnel or system installers.**
- **Do not block the ventilation opening or slots on the cover.**
To prevent the appliance from overheating, place it at least 5 cm (2 inches) away from the wall.
- **Do not drop metallic parts through slots.**
This could permanently damage the appliance. Turn the power off immediately and contact qualified service personnel for service.
- **Do not attempt to disassemble the appliance.**
To prevent electric shock, do not remove screws or covers.
There are no user-serviceable parts inside. Contact qualified service personnel for maintenance.
- **Handle the appliance with care.**
Do not strike or shake, as this may damage the appliance.
- **Fully charge up the backup battery.**
Keep the appliance turned on for at least 48 hours to recharge the backup battery. This procedure is necessary when using the appliance for the first time or after it has been unplugged for a long time from the AC outlet. Insufficient charging of the battery may cause erasure of settings if the AC power supply should fail. The battery, if fully charged, will back up the settings for 480 hours in an ordinary environment.
- **We recommend that you note down your settings and retain them. Power or battery failure may erase settings you entered.**
- **Do not expose the appliance to water or moisture, nor try to operate it in wet areas.**
Do take immediate action if the appliance becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture may damage the appliance and also cause electric shock.
- **Do not use strong or abrasive detergents when cleaning the appliance body.**
Use a dry cloth to clean the appliance when it is dirty.
When the dirt is hard to remove, use a mild detergent and wipe gently.
- **Do not operate the appliance beyond its specified temperature, humidity or power source ratings.**
Do not use the appliance in an extreme environment where high temperature or high humidity exists. Use the appliance at temperatures within +5°C - +40°C (41°F - 104°F) and a humidity below 90 %. The input power source for this appliance is 120 V AC 60 Hz.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

■ Front View



1. Operate indicator (OPERATE)

This indicator (Green) is lit while the Disc Recorder's power is turned on.

2. Remote indicator (REMOTE)

This indicator (Orange) lights up when the Disc Recorder is controlled remotely via Serial Control Port.

3. Alarm Reset button (RESET)

This button is used to cancel the activated alarm. Press this button, while the alarm function is activated, to reset the alarm and return the system to the condition before the alarm is activated.

4. Alarm indicator (ALARM)

This indicator (Red) lights up to indicate that an alarm condition exists.

It changes to blink light automatically after two (2) seconds.

To turn off the indicator, press the Alarm Reset button.

5. Alarm Record indicator (ALARM REC)

This indicator (Green) lights up to indicate that the Disc Recorder is recording in alarm record mode.

6. Record indicator (REC)

This indicator (Red) lights up to indicate while the Disc Recorder is in recording mode.

Also it blinks to indicate that the Disc Recorder is on standby for recording.

7. Disc indicator (DISC)

This indicator (Red) blinks (or lights up) to indicate the disc space left.

The indicator begins to blink at the ten (10) percents' space left, then blinks rapidly at the five (5) percents' space left. It changes to steady light when the disc space left becomes less than one (1) percentage.

Also it indicates that the Disc Recorder overwrites the record on the disc in the endless recording mode.

It alternately turns on light for two seconds and off the light for half second.

8. Disc Cover

Press here to open the cover for taking in and out the disc.

To prevent the disc drive unit from the dust, usually close this cover.

9. Ventilation opening

To prevent the appliance from overheating, do not block the ventilation opening or slots on the cover.

10. Control panel

Press here to open the control panel that is located the control buttons.

11. Busy indicator

This indicator lights green while the DVD-RAM disc is inserted in the recorder. It changes to light orange while the disc drive is activated.

12. Shutter

Press the OPEN/CLOSE button in the Control Panel to slot out (or slot in) the disc compartment while the Disc Cover is opened.

13. Eject hole

This hole is used if the disc is not taken out on the compartment even the OPEN/CLOSE button is pressed.

21. Find button (FIND)

This button is used to find the recorded pictures on the disc directly specified.

22. Index button (INDEX)

This button is used to search the recorded picture on the disc.

23. Alarm Record button (ALARM REC STANDBY)

This button lets you enable or disable alarm record.

24. Reverse Step button (⏮)

Left  button

This button is used to step reverse for a record from the step that is presently played back record during playback.

Also this button is used to move the cursor to left, or select a mode or parameter of the selected item in reverse during setup.

25. Reverse Frame button (⏮)

Down  button

This button is used to step reverse for a single frame from the record that was previously paused on a monitor by pressing the PAUSE button.

Also this button is used to move the cursor to downward during setup.

26. Forward Frame button (⏭)

Up  button

This button is used to step forward for a single frame from the record that was previously paused on a monitor by pressing the PAUSE button.

Also this button is used to move the cursor to upward during setup.

27. Set button (SET)

This button is used to execute the selected parameter during search record.

Also this button is used to execute the selection and enter a sub menu of the selected item during the setup.

28. Forward Step button (⏭)

Right  button

This button is used to step forward for a record from the step that is presently played back record during playback.

Also this button is used to move the cursor to right, or select a mode or parameter of the selected item forward during setup.

29. Pause button (II/PAUSE)

This button is used to pause a playback that is being displayed on the monitor screen.

Also this button, in combination with the REC button, is used to record on standby status.

30. Reverse Play button (⏮)

This button is used to play back the recorded pictures in reverse.

During playback, hold down this button to play back faster in reverse, then release this button to return to normal speed.

31. Record button (REC)

This button is used to start recording in specified recording mode previously setup.

32. Play button (▶)

This button is used to play back the recorded pictures in forward.

During playback, hold down this button to play back faster in forward, then release this button to return to normal speed.

33. Lock switch (LOCK OFF/ON)

This switch can be used to lock out operation of the Disc Recorder.

While this switch is in ON position, control from the control panel and parallel control port are disabled. Select this switch in OFF position normally.

34. Stop button (STOP)

This button is used to terminate playback or recording mode.

35. Open/Close button (OPEN/CLOSE)

This button is used for taking in and out the disc while the Disc Cover is opened.

36. Increment button (Δ +)

This button is used to decrease playback speed during playback.

During the playback pause mode, press this button to toggle the playback channel (or camera ID) forward for playback. Press the PLAY BACK SELECT button to play back the selected channel input.

37. Decrement button (∇ -)

This button is used to increase playback speed during playback.

During the playback pause mode, press this button to toggle the playback channel (or camera ID) backward for playback. Press the PLAY BACK SELECT button to play back the selected channel input.

38. Play Back Select button (PLAY BACK SELECT)

Press this button to play back the selected channel input, that was previously selected by pressing the (+) or (-) button during the playback pause mode.

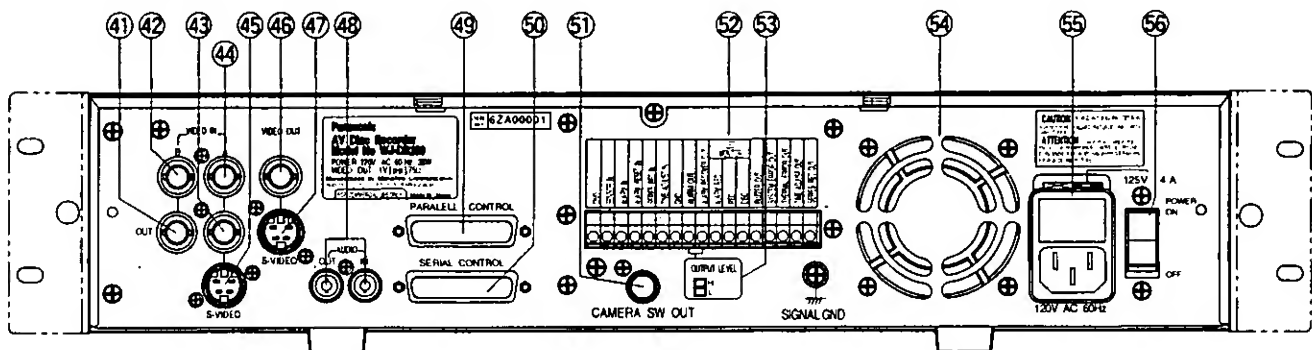
39. Set Up/Escape button (SET UP/ESC)

This button is used to display the setup menu of the Disc Recorder.

Press this button more than two (2) seconds to display the MAIN menu for setup.

During setup, press this button to return to the previous menu, or press this button more than two (2) seconds to terminate setup and return to the normal view.

■ Rear View



41. Looped Through Output B connector (B, OUT)

The video signal connected to the VIDEO IN B connector is looped through to this connector with an automatic 75 Ω termination.

42. Video Input B connector (VIDEO IN, B)

This connector accepts NTSC composite video signal from an external equipment.

43. Looped Through Output A connector (A, OUT)

The video signal connected to the VIDEO IN A connector is looped through to this connector with an automatic 75 Ω termination.

44. Video Input A connector (VIDEO IN, A)

This connector accepts NTSC composite video signal from an external equipment.

45. S-Video Input connector (VIDEO IN, S-VIDEO)

This connector accepts NTSC S-Video signal from an external equipment.

46. Video Output connector (VIDEO OUT)

The video signal selected on the Disc Recorder is supplied to the Video Monitor.

47. S-Video Output connector (S-VIDEO)

The video signal selected on the Disc Recorder is supplied to the Video Monitor.

48. Audio Output/Input connector (AUDIO OUT/IN)

These connectors are provided to record or playback audio.

49. Parallel Control port (PARALLEL CONTROL)

This port is used to control the Disc Recorder from an external system.

50. Serial Control port (SERIAL CONTROL)

This port is used to connect a Personal Computer to control the Disc Recorder remotely.

51. Camera Switching Output connector (CAMERA SW OUT)

This connector supplies a pulse every frame is recorded on the disc.

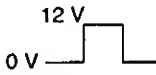
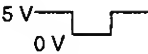
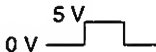
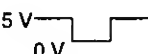
52. Terminal Board

This terminal is used to connect input and output signals from the external equipment.

53. Alarm Output Level selector

This selector is used to switch output level of the ALARM OUT and ALARM RECOVER OUT on the Terminal Board.

Initially, L is selected at the factory.

	H	L
Alarm Output		
Alarm Recover Output		

54. Cooling fan

It rotates to prevent temperature rising.

55. AC socket.

Connect here the supplied power cord.

56. Power switch (POWER ON /OFF)

This switch is used to turn the Disc Recorder's power On or Off.

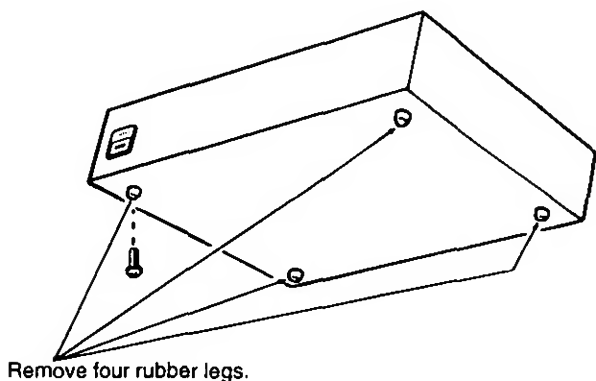
INSTALLATION AND SYSTEM CONNECTIONS

INSTALLATIONS

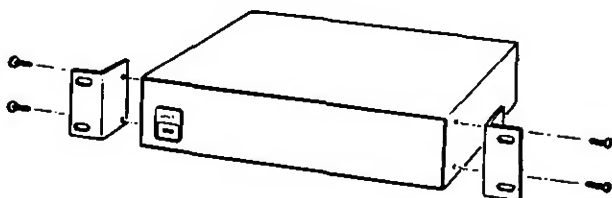
The installations described below should be made by qualified service personnel or system installers.

■ Mounting in the Rack

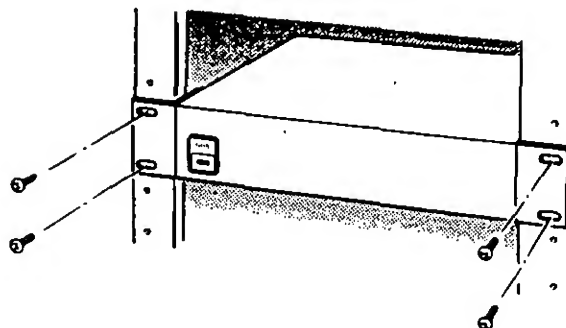
1. Remove the four rubber feet by removing the four screws from the bottom of the Disc Recorder.



2. Place the rack mounting brackets on both sides of the Disc Recorder and tighten them with the four supplied screws (M4 X 10).



3. Install the Disc Recorder with the rack mounting brackets in the rack by using four screws (not included).



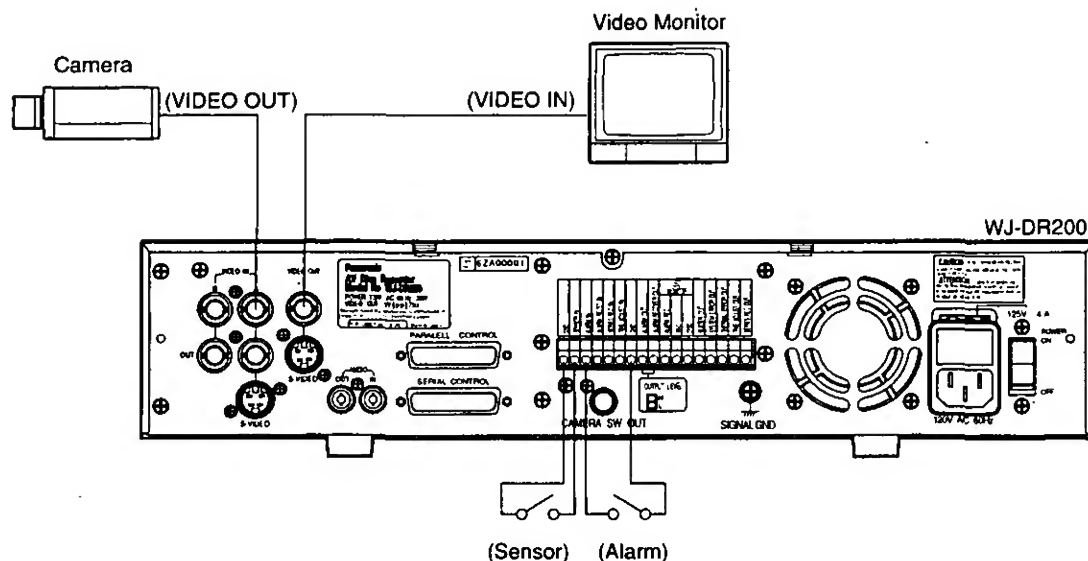
Cautions:

- Do not block the ventilation opening or slots in the cover to prevent the appliance from overheating.
Always keep the temperature in the rack within +40°C (104°F).
- Secure the rear of the appliance to the rack by using additional mounting brackets (procured locally) if the rack is subject to vibration.

SYSTEM CONNECTIONS

■ Basic System

Shown below is an example of a basic system connection.



Requirements for alarm and sensors

- Open collector output or no-voltage make contact
- Voltage between the Ground Terminal and Alarm Input or Sensor Input must be 0 to 0.2V at make contact. The polarities can be changed by setting of SIGNAL TYPE on Alarm Record Menu. Refer to Alarm Input Signal Setup on page 26 for details of settings.

Notes:

- Recording the playback picture from the VCR is not available. Even if the playback picture is recorded, recorded picture will be played back irregularly.
- If two (2) or more cameras are connected, for example by multiplexer, match the synchronization of all cameras to have proper images.
- Refer all work related to the connection to qualified service personnel or system installers.

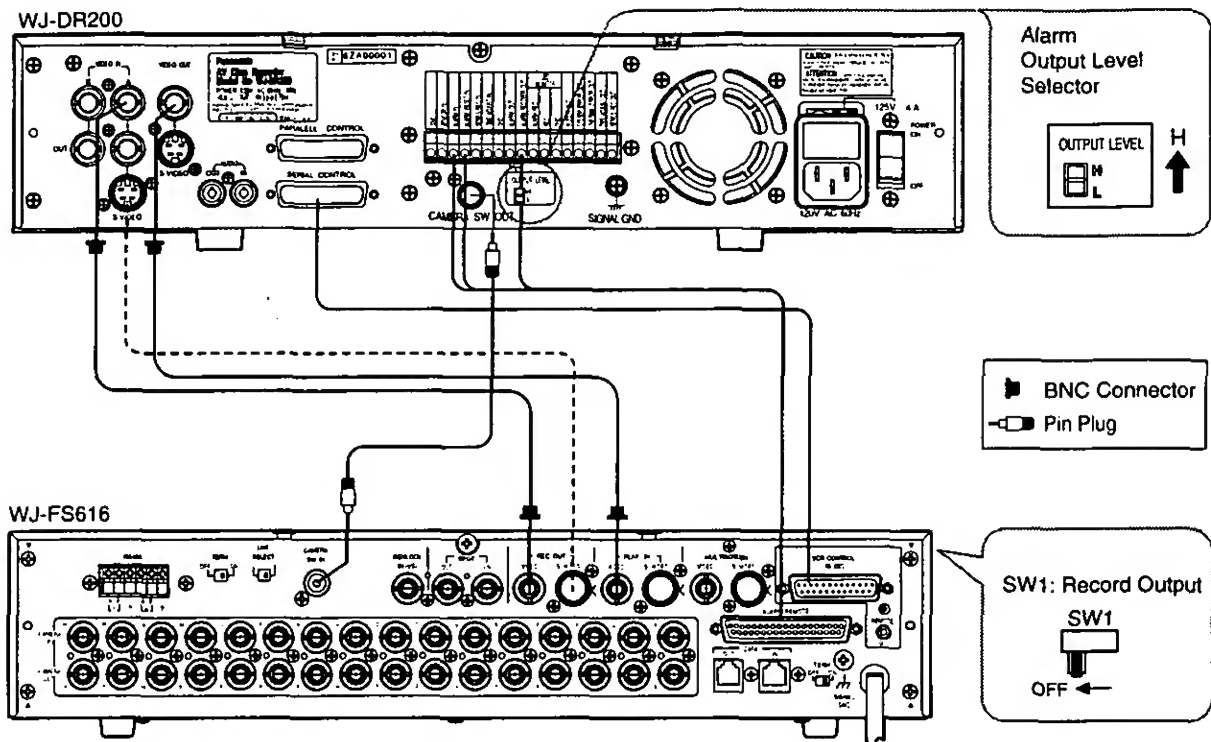
■ Connection with Video Multiplexer

Example: Connection with Video Multiplexer WJ-FS616

Note: Connections with another Video Multiplexers, refer to qualified service personnel or system installer.

● Setting of WJ-DR200

Setup Menu of WJ-DR200	Items	Parameter	Initial Factory Setting
VIDEO INPUT	VIDEO INPUT	COMPOSITE *1	COMPOSITE
		S *1	COMPOSITE
	CAMERA INPUT	A (CAMERA ID ON)	A (CAMERA ID OFF)
MULTI SHOT (MODE *)	CAPTURE RATE	More than 0.1 sec.	0.20 sec.
TIME LAPSE (MODE *)			
MANUAL REC ALARM			
SERIAL SET UP	SIGNAL TYPE	RS-232C (VCR mode) *3	RS-232C



● Setting of WJ-FS616

Setup Menu of WJ-DR200	Items	Parameter	Initial Factory Setting
SYSTEM SETUP 2/2	VCR IN SELECT	VIDEO *1	VIDEO
		S-VIDEO *1	VIDEO
WJ-FS616 SETUP MENU	REC/MULTI 2	REC OUTPUT	REC OUTPUT
REC MODE SETUP 1/2		MODE 9 (EXT1 or EXT4) *3	MODE 0
SYSTEM SETUP 1/2	SEQ TIMING-MLT	INT (TIME-AJD)	INT (TIME-ADJ)
ALARM SETUP 2/2	ALM SCHEDULE	ON	OFF
	ALM OUTPUT DUR	EXT *5	2 sec.
	DYNAMIC REC	ON *4	OFF
	ALM REC MODE	MODE 9	MODE 0
SERIAL SET UP	RS-232C MODE	VCR *2	VCR

*1. Select VIDEO or S-VIDEO according to the connection.

VIDEO: Select this parameter when the BNC connector is used for the connection.

S-VIDEO: Select this parameter when the S- VIDEO connector is used for the connection.

Monitoring the playback picture from the MULTISCREEN OUT connector or the SPOT connector is not available.

*2. Connect only when WJ-DR200 is controlled by Video Multiplexer WJ-FS616. (Refer the cable for the connections to qualified service personnel or system installer.)

The setting the value for communication (DATA BIT, PARITY etc.,) on both WJ-DR200 and WJ-FS616 is required.

*3. This is the value when EXT1 is selected. If EXT 4 is selected, set the value of the parameter more than 0.20 sec.

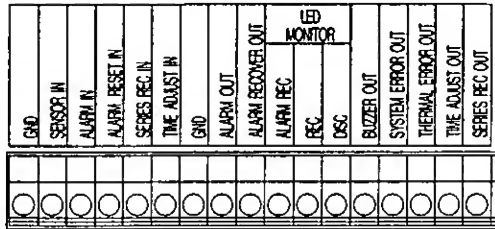
When the CAMERA SW OUT connector of this WJ-DR200 is not connected with the CAMERA SW IN connector of WJ-FS616, adjust the value of the parameter for WJ-DR200 according to the setting of the switching rate for WJ-FS616.

*4. Set this parameter to change the recording rate automatically when the alarm signal is received.

*5. Set the recording time when alarm time lapse recording is required.

■ Terminal Board

The Terminal Board has the following functions.
Use these terminal to meet your system requirement.



SYSTEM ERROR OUT: Supplies a signal when the fatal error is occurred during the operations.

THERMAL ERROR OUT: Supplies a signal when the temperature rises in the Disc Recorder.

TIME ADJUST OUT: Supplies a pulse for one second at every 9:00 AM.

SERIES REC OUT: Enables recording mutually when two recorders are connected.

● Input Terminals

SENSOR IN: Accepts a signal to start recording in Alarm Record mode if the Alarm Record mode is selected:

(Becomes recording status during received signals if the Time Lapse mode is selected.)

The ALARM indicator does not light on this recording input.

ALARM IN: Accepts a signal to start recording in Alarm Record mode if the Alarm Record mode is selected.

(Becomes recording status during received signals if the Time Lapse mode is selected.)

The ALARM indicator lights up on this recording input and also beeps buzzer by setup.

ALARM RESET IN: Accepts a signal to release an alarm output and an alarm buzzer when the alarm is activated.

SERIES REC IN: Enables recording mutually when two recorders are connected.

TIME ADJUST IN: Accepts a signal to adjust internal clock of this recorder. Set the clock to 00 second at a range of 30 seconds.

● Output Terminals

ALARM OUT: Supplies an alarm signal when the alarm is activated.

ALARM RECOVER OUT: Supplies alarm recover signal when the ALARM RESET button is pressed, received an alarm reset signal, or terminated recording in alarm record mode.

ALARM REC: Supplies a signal when the Disc Recorder is in Alarm Record mode.

REC: Supplies a signal when the Disc Recorder is recording pictures.

The output signal is linked with the REC indicator on the front of the Disc recorder.

DISC: Supplied a signal when the disc space becomes scanty.

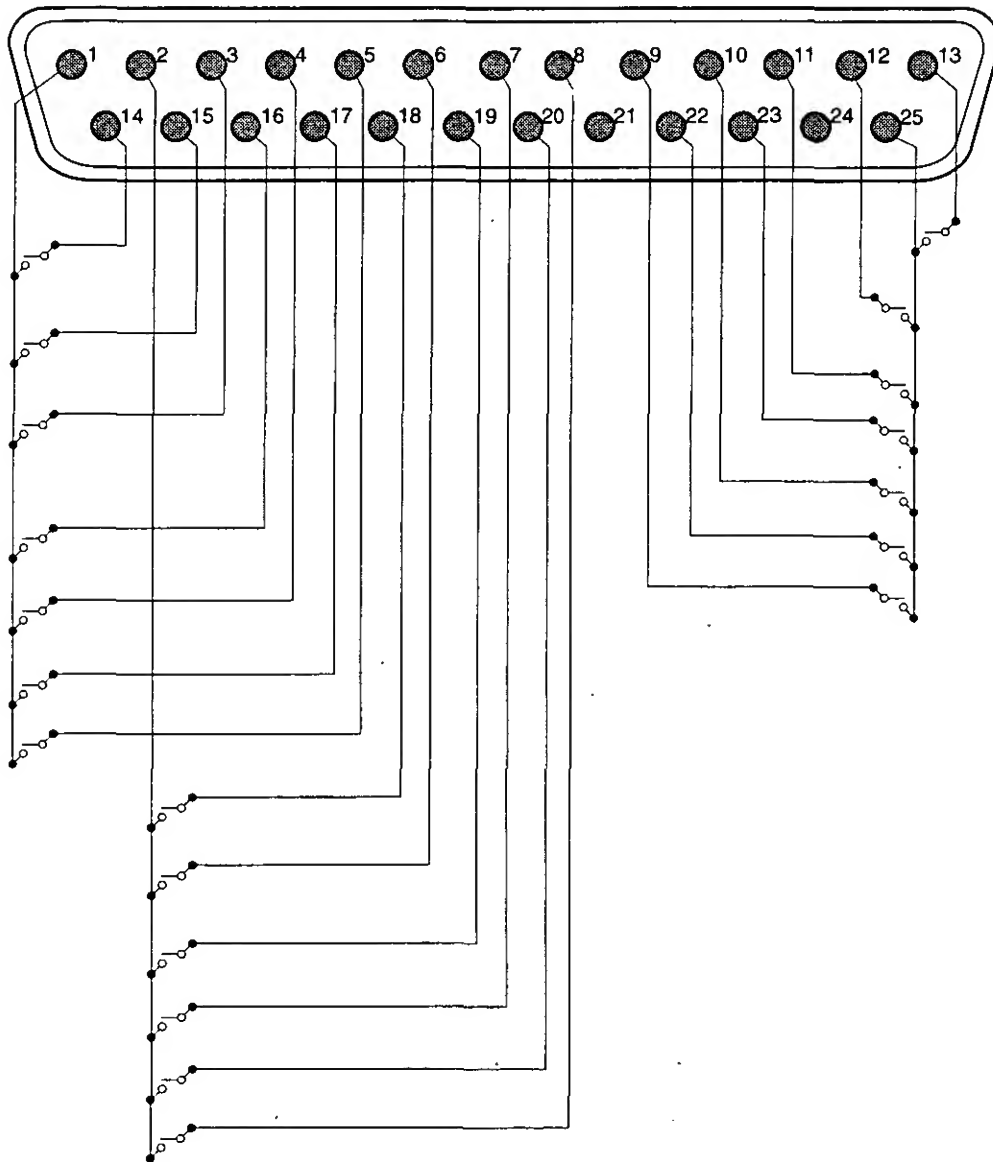
It is enabled to change the output by setup.

BUZZER OUT: Supplies a signal that is linked with the buzzer in the Disc Recorder.

■ External Remote Control

● Parallel Control Port

Connect the switches to the PARALLEL CONTROL port on the rear of the Disc Recorder as shown in the example below, it is enabled control as same as control buttons on the front panel of the Disc Recorder.



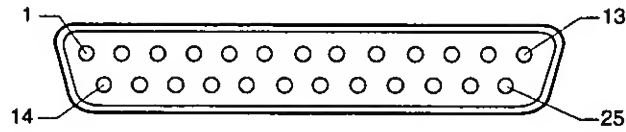
Pin No.	Designation	Pin No.	Designation
1	Ground	14	FIND
2	Ground	15	REC
3	ALARM REC STANDBY	16	FORMAT -
4	UP	17	DOWN
5	STOP	18	OPEN/CLOSE
6	SET UP/ESC	19	FORMAT +
7	LOCK	20	PLAY BACK SELECT
8	INDEX	21	Not Used
9	LEFT	22	REVERSE PLAY
10	SET	23	ALARM RESET
11	PLAY	24	Not Used
12	RIGHT	25	Ground
13	PAUSE		

● Serial Control Port

Connect a Personal Computer to the SERIAL CONTROL port on the rear of the Disc Recorder.

This port, that is in conformity to RS-232C and RS-485, enables control of the Disc Recorder remotely or store video data to a Personal Computer. Refer to the Serial Port Setup on page 17 for details setup.

This port is designed as shown below.



Pin No.	Designation	INPUT/OUTPUT	Function
1	FG	–	Frame Ground
2	TxD	out	Transmit Data
3	RxD	in	Receive Data
4	RTS	out	Request to Send
5	CTS	in	Clear to Send
6	DSR	in	Data Set Ready
7	SG	–	Signal Ground
8	DCD	in	Data Carrier Detect
12	T(B)	out	Transmit Data (RS-485)
17	R(B)	in	Receive Data (RS-485)
18	R(A)	in	Receive Data (RS-485)
20	DTR	out	Data Terminal Ready
23	T(A)	out	Transmit Data (RS-485)

■ Series Recording Connection

This Disc Recorder enables record automatically in series when two recorders are connected via Terminal Boards of this recorder

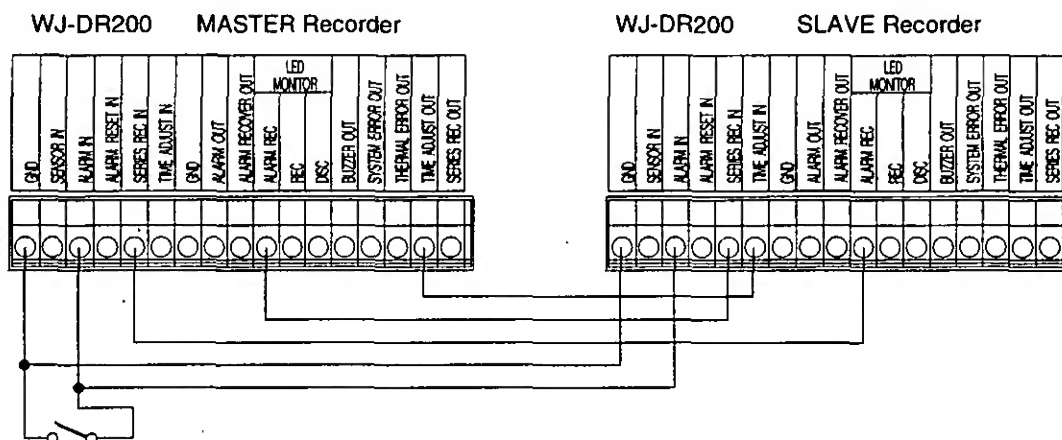
● Series Record 1 (Alternate Alarm Record)

Connect the terminals on the Terminal Boards of the MASTER and SLAVE Recorder as shown below.

Connect the requirement (video and audio) to both recorders.

It is enabled recording alternately in Alarm Record mode.

If the disc space is used up in the MASTER recorder, the alarm record will be switched to the disc space in the SLAVE recorder.



● Series Record 2

(Alternate Time Lapse Record)

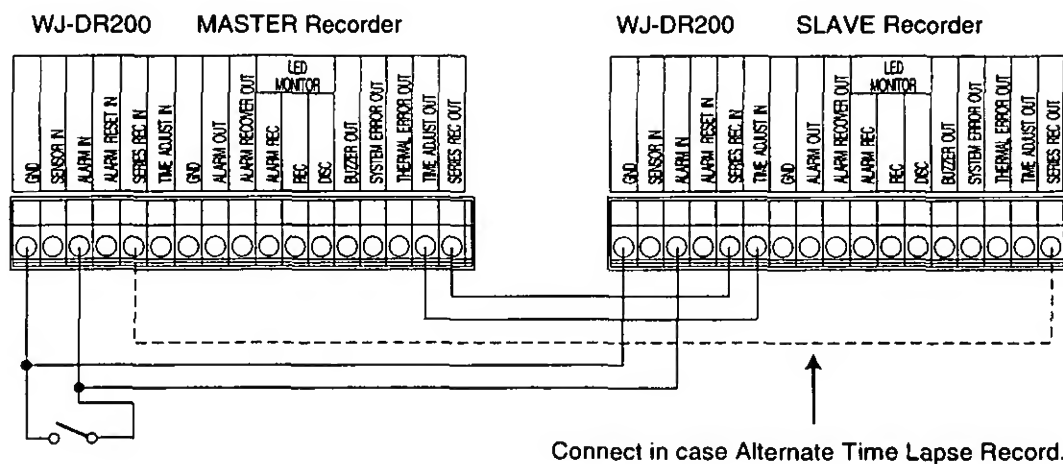
Connect the terminals on the Terminal Boards of the MASTER and SLAVE Recorder as shown below.

If the disc space is used up in the MASTER recorder, the time lapse record will be switched to the disc space in the SLAVE recorder. If another alarm signal is received during the MASTER recorder is recording, the SLAVE recorder starts recording.

(Alarm Record with Subsidiary Record)

The SLAVE recorder starts recording when another alarm signal is received during the MASTER recorder is recording. When the MASTER recorder is operated for playing back, searching, etc.(not recording), Alarm Record with Subsidiary Record by the SLAVE recorder is not available.

Connect the requirement (video and audio) to both recorders.



When the sensor input is required, connect with SENSOR IN instead of ALARM IN.

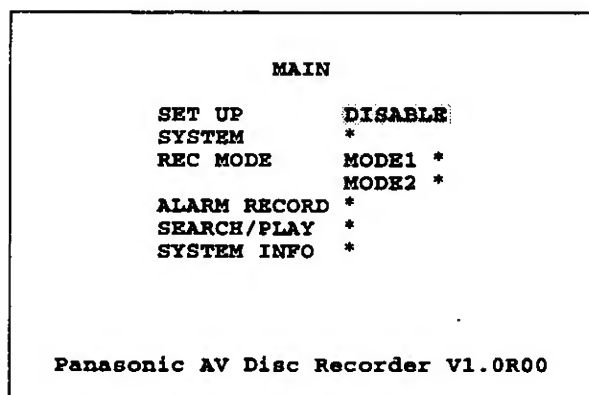
SETUP PROCEDURES

The Setup Menu provides a way for controlling functions not available through direct input.

● Displaying the SETUP MENU

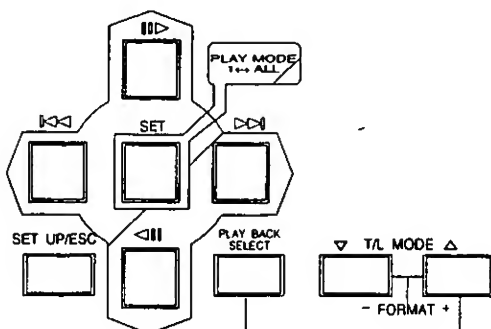
1. Confirm the camera and peripherals are connected correctly and securely.
2. Turn on the power switches of all system components.
3. Press the **SET UP/ESC** button of the Disc Recorder for two (2) seconds or more.

The MAIN menu appears on the monitor screen as shown below.



- The following buttons are valid in the setup menu:

- UP** : Moves the cursor upward.
- DOWN** : Moves the cursor downward.
- LEFT** : Moves the cursor to the left, or selects the mode or parameter.
- RIGHT** : Moves the cursor to the right, or selects the mode or parameter.
- SET**: Executes the selections and displays a submenu for an item with the (*) mark.
- SET UP/ESC**: Executes the currently selected setting and return to the previous menu in the setup menu.
- (-)**: Selects the mode or parameter forward.
- (+)**: Selects the mode or parameter in reverse.



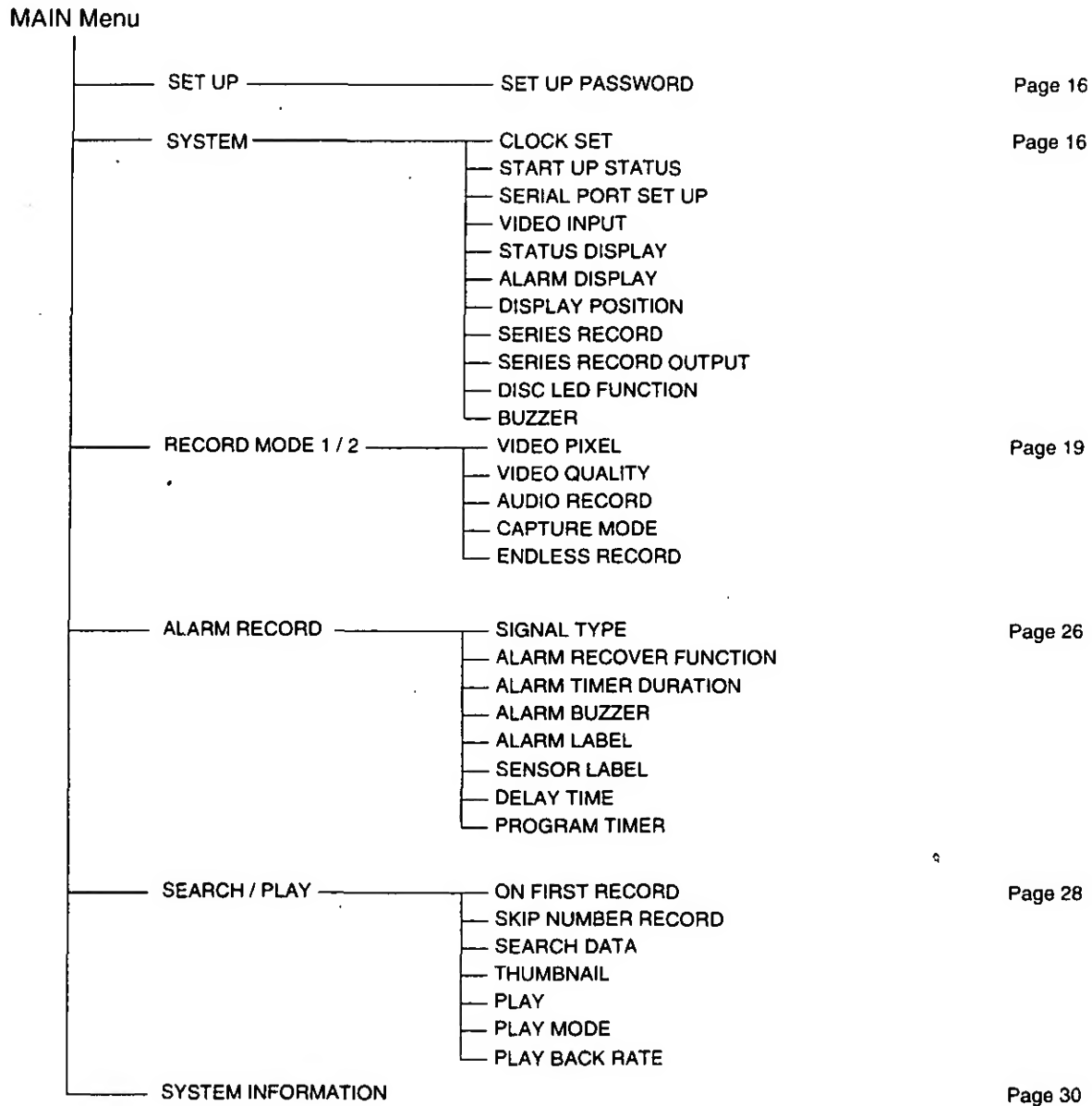
- To finalize the setting and return to normal viewing, press the **SET UP/ESC** button for two (2) seconds or more while the MAIN menu is displayed.

Note: If alarm is activated during the setup operation, the setup menu disappears and the display returns to the normal picture. Any settings previously made take effect, even if the SET UP/ESC button was not pressed.

■ MAIN Menu

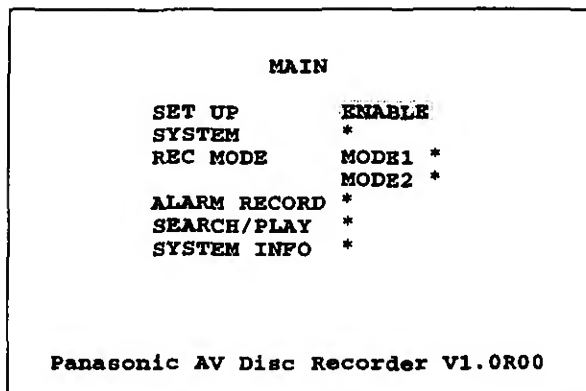
As shown below, the MAIN menu has seven main sub menus: Set Up, System, Record Mode 1, Record Mode 2, Alarm Record, Search/Play, and System Information.

Six of these sub menus; System, Record Mode 1, Record Mode 2, Alarm Record, Search/Play and System Information, are further divided into additional submenus.



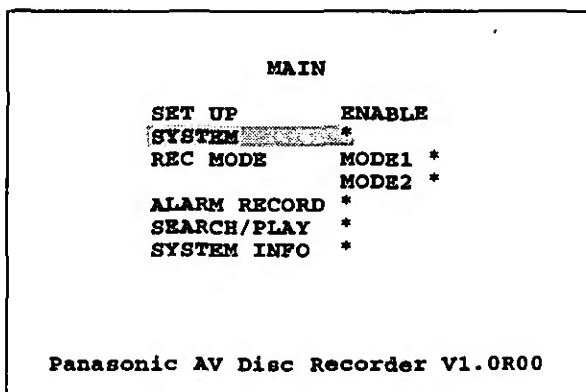
■ SET UP Menu

This menu lets you permit editing the setup menu. If the password setup is attempted, up to eight (8) characters are entered to identify the password.

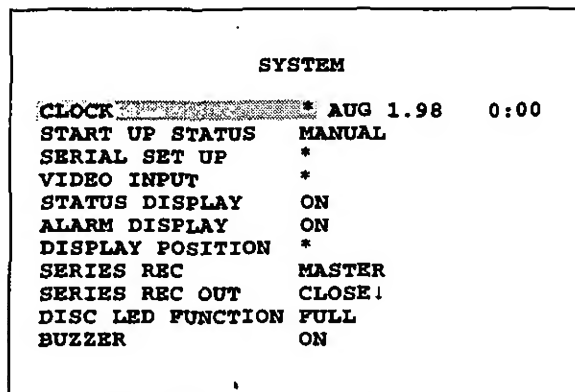


1. Move the cursor to the SET UP parameter in the MAIN Menu by pressing the or button.
2. Select ENABLE or PASSWORD by pressing the or button. The initial factory setting is DIS-ABLE.
3. Select ENABLE to permit editing the menu, or select PASSWORD to continue the procedures to set password.
Refer to the password on page 31 for further detail settings.

■ System Menu



Select SYSTEM from the MAIN menu by pressing the or button, then press the **SET** button. The SYSTEM menu appears on the monitor screen. As shown below, the SYSTEM menu allows access to eleven (11) items.



To select an item or parameter in the **SYSTEM** menu:

1. Move the cursor to the desired item or parameter by pressing the or button.
2. Press the or button to select the desired parameter.
3. Press the **SET** button to execute the selection for an item with the (*) mark, and displays a submenu for an item on the monitor screen.
4. Press the **SET UP/ESC** button to return to the previous MAIN menu, if desired.

● Clock Setup

This item lets you set the current time and date.

1. Move the cursor to CLOCK in the SYSTEM menu by pressing the or button, then press the **SET** button to move the cursor to the editing area.
2. Move the cursor to the area you want to edit by pressing the or button, then select the month or number by pressing the (+) or (-) button.

Notes:

- Valid dates are between the year 1998 and the year 2096.
Select the last two digits for years. Select "00" for the year of 2000.
- Select the two digits (military time) for hours.

3. After finishing the setting, press the **SET UP/ESC** button to move the cursor to CLOCK.

Note: The date and time are updated when the SET UP/ESC button is pressed.

● Start Up Status Setup

This item lets you select the active mode automatically when the Disc Recorder's power is turned on.

1. Move the cursor to the START UP STATUS parameter in the SYSTEM menu by pressing the or button.

2. Select the desired mode by pressing the ☐ or ☐ button.

MANUAL: Selects manual record mode.

ALARM REC: Selects Alarm Record mode.

DISC AND ALARM REC: Selects Alarm Record mode if the formatted disc is inserted.

The initial factory setting is MANUAL.

Note: It is recommended to select the mode shown below for normal usage.

- Select ALARM REC in the menu if the Alarm Record mode is used frequently.
MANUAL or ALARM REC mode can be selected by pressing the ALARM REC STANDBY button on the control panel of the recorder.
- Select DISC AND ALARM REC in the menu if the disc is exchanged after every powered on the Disc Recorder.
The recorder automatically selects Alarm Record mode if the formatted disc is inserted.

● Serial Port Setup

This item lets you set the communication parameters between the SERIAL CONTROL port of the recorder and a Personal Computer, when the Disc Recorder is controlled remotely from external.

1. Move the cursor to SERIAL SET UP in the SYSTEM menu by pressing the ☐ or ☐ button, then press the **SET** button. The SERIAL SET UP menu shown below appears on the monitor screen.

SERIAL SET UP	
PORT NUMBER	01
SIGNAL TYPE	RS-232C
BAUD RATE	9600
SET UP INFO	
START BIT	1
DATA BIT	8
PARITY CHECK	NONE
STOP BIT	1
Xon/Xoff	NOT USE
CIRCUIT SYSTEM	HALF DUPLEX

2. Move the cursor to the PORT NUMBER parameter by pressing the ☐ or ☐ button.
3. Select the desired port number (01 to 16) by pressing the ☐ or ☐ button to identify the Disc Recorder when multiple recorders are connected in the system.

The initial factory setting is 01.

4. Move the cursor to the SIGNAL TYPE parameter by pressing the ☐ or ☐ button.

5. Select the desired interface mode shown below by pressing the ☐ or ☐ button.

RS-232C, RS-232C (VCR mode), RS-485

The initial factory setting is RS-232C.

6. Move the cursor to the BAUD RATE parameter by pressing the ☐ or ☐ button.

7. Select the desired baud rate shown below by pressing the ☐ or ☐ button.

2 400, 4 800, 9 600, 19 200, 38 400, 57 600, 115 200

The initial factory setting is 9 600.

8. Press the **SET UP/ESC** button to return to the previous SYSTEM menu.

● Video Input Setup

This item lets you set the method of video input located on the rear of the Disc Recorder.

1. Move the cursor to VIDEO INPUT in the SYSTEM menu by pressing the ☐ or ☐ button, then press the **SET** button. The VIDEO INPUT menu shown below appears on the monitor screen.

VIDEO INPUT	
VIDEO INPUT	COMPOSITE
CAMERA INPUT	A (CAMERA ID OFF)
CAMERA TYPE	COLOR
INPUT CHECK	-

2. Move the cursor to the VIDEO INPUT parameter by pressing the ☐ or ☐ button.

3. Select either COMPOSITE or S-VIDEO by pressing the ☐ or ☐ button for video input.

COMPOSITE: Selects composite input for VIDEO IN A and B

S: Selects only S-video input terminal.

The initial factory setting is COMPOSITE.

4. Move the cursor to the CAMERA INPUT parameter by pressing the ☐ or ☐ button.

5. Select the desired input and recording method by pressing the ☐ or ☐ button.

A (CAMERA ID ON): Records only input A with multiplexed Camera ID signals.

Use this parameter to connect with the Video Multiplexer, and the video pixel (resolution) is fixed at 720 * 240.

A (CAMERA ID OFF): Records only input A without multiplexed Camera ID signals.

A+B (CAMERA ID OFF): Records input A and B without multiplexed Camera ID signals.

Use this parameter to connect with two cameras.

Note: The audio record is disabled in the multiple shot or time lapse recording when two inputs are selected for recording.

The initial factory setting is A (CAMERA ID OFF).

6. Move the cursor to the CAMERA TYPE parameter by pressing the or button.

5. Select either COLOR or B/W according to the connected camera by pressing the or button.

COLOR: Select this mode when the color camera is connected for input.

B/W: Select this mode when the black and white camera is connected for input.

The initial factory setting is COLOR.

7. Move the cursor to the INPUT CHECK parameter by pressing the or button.

8. Press the or button to display the video, that is selected on this parameter, on the monitor screen.

This function is available only when the CAMERA INPUT parameter is set to A+B (CAMERA ID OFF) in this menu.

9. Press the **SET UP/ESC** button to return to the previous SYSTEM menu.

● Status Display Setup

This item lets you enable or disable status display, or display embedded display on the monitor screen.

1. Move the cursor to the STATUS DISPLAY parameter in the SYSTEM menu by pressing the or button.

2. Select the desired mode by pressing the or button.

ON: Enables status display on the monitor screen.

OFF: Enables status display for two seconds on the monitor screen when the status is only changed.

EMBEDDED: Displays only date and time in recording mode and all the status display in playback mode.

The initial factory setting is ON.

● Alarm Display Setup

This item lets you enable or disable alarm display on the monitor screen.

1. Move the cursor to the ALARM DISPLAY parameter in the SYSTEM menu by pressing the or button.

2. Select either ON or OFF by pressing the or button.

ON: Enables alarm display on the monitor screen.

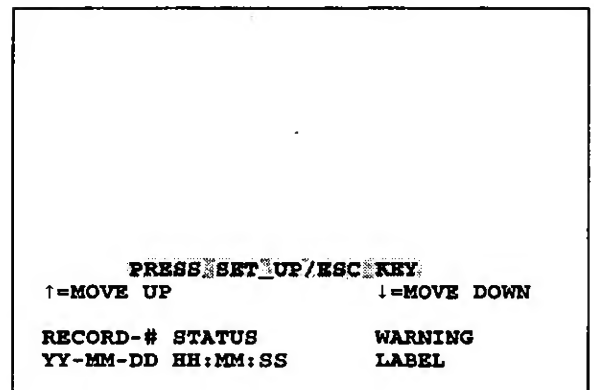
OFF: Disables alarm display on the monitor screen

The initial factory setting is ON.

● Display Position Setup

This item lets you select the positions where the alarm and status displays are displayed on the monitor screen.

1. Move the cursor to DISPLAY POSITION in the SYSTEM menu by pressing the or button, then press the **SET** button. The position setup menu shown below appears on the monitor screen.



2. Move the display position by pressing the or button, then press the **SET UP/ESC** button to execute the selection and return to the previous SYSTEM menu.

● Series Record Setup

This item lets you set the relation, either master or slave, when two or more Disc Recorders are used recording in series.

1. Move the cursor to the SERIES REC parameter in the SYSTEM menu by pressing the or button.

2. Select either MASTER or SLAVE by pressing the or button.

MASTER: Sets to a master recorder.

SLAVE: Sets to a slave recorder.

Use this parameter for except master recorder.

The initial factory setting is MASTER.

● Series Recording Output Setup

This item lets you set the signal type of the SERIES REC OUT terminal on the Terminal Board that is located on the rear of the Disc Recorder.

1. Move the cursor to the SERIES REC OUT parameter in the SYSTEM menu by pressing the or button.

2. Select either OPEN or CLOSE by pressing the or button.

OPEN: Supplies series recording output signal when the Disc Recorder is not in recording mode.

Select this parameter to perform Alarm Record with Subsidiary Record (page 38).

CLOSE: Supplies series recording output signal when the Disc Recorder is in recording mode.

Select this parameter to perform Alternate Time Lapse Record (page 37).

The initial factory setting is CLOSE.

● Disc LED Function Setup

This item lets you set signal type of the DISC LED MONITOR on the Terminal Board that is located on the rear of the Disc Recorder.

1. Move the cursor to the DISC LED FUNCTION parameter in the SYSTEM menu by pressing the or button.

2. Select either SPACE or FULL by pressing the or button.

SPACE: Supplies output signal as same as DISC indicator in accordance with disc space left.

FULL: Supplies output signal when the disc is fully recorded.

The initial factory setting is FULL.

● Buzzer Setup

This item lets you enable or disable buzzer if the buttons of the recorder are pressed.

1. Move the cursor to the BUZZER parameter in the SYSTEM menu by pressing the or button.

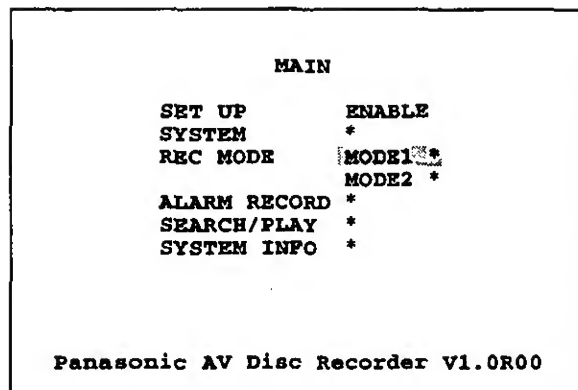
2. Select either ON or OFF by pressing the or button.

ON: Enables buzzer.

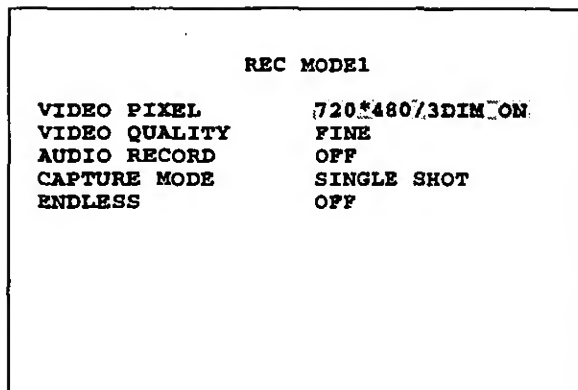
OFF: Disables buzzer.

The initial factory setting is ON.





■ Record Mode Menu



Move the cursor to the REC MODE parameter, either MODE 1 or MODE 2, in the MAIN menu by pressing the or button, then press the SET button. The REC MODE 1 or REC MODE 2 menu shown below appears on the monitor screen.







To edit an item parameter in the **REC MODE** menu:

1. Move the cursor to the desired item parameter by pressing the  or  button.
2. Select desired parameter by pressing the  or  button.
3. Press the **SET UP/ESC** button to return to the previous MAIN menu, if desired.

● Video Pixels (Resolution) Setup

This item lets you set the picture resolution that is quantities of horizontal and vertical pixels in the picture element.

1. Move the cursor to the VIDEO PIXEL parameter in the REC MODE menu by pressing the  or  button.
2. Select desired mode by pressing the  or  button.

720 * 480/3DIM ON: High resolution picture with none blur picture

720 * 480/3DIM OFF: High resolution picture





720 * 240: Lower resolution, but increases recording picture quantities.

The initial factory setting is 720 * 480/3DIM ON.

Note: The parameter 720 * 240 is fixed if the A(CAMERA ID ON) is selected for the CAMERA INPUT parameter in the VIDEO INPUT menu.

● Video Quality (Compression Rate) Setup





This item lets you set the picture quality that is determined by the compression rate of the picture.

1. Move the cursor to the VIDEO QUALITY parameter in the REC MODE menu by pressing the  or  button.
2. Select desired mode by pressing the  or  button.
 - FINE:** Sets to sharpness enhanced picture quality.
 - NORMAL:** Sets to normal picture quality.
 - ROUGH:** Sets to lower picture quality.

The initial factory setting is FINE.

● Audio Record Setup





This item lets you enable or disable audio record, if applicable.

1. Move the cursor to the AUDIO RECORD parameter in the REC MODE menu by pressing the  or  button.
2. Select either ON or OFF by pressing the  or  button.
 - ON:** Enables audio record.
 - OFF:** Disables audio record.

The initial factory setting is ON.

● Capture Mode Setup

This item lets you set the recording method that is recorded on the disc.

1. Move the cursor to the CAPTURE MODE parameter in the REC MODE menu by pressing the  or  button.
2. Select the desired mode by pressing the  or  button.

SINGLE SHOT: Sets to recording in single shot mode.

MULTI SHOT * : Sets to recording in multiple shot mode.

TIME LAPSE * : Sets to recording in time lapse mode.

The initial factory setting is SINGLE SHOT.





If MULTI SHOT or TIME LAPSE is selected for CAPTURE MODE parameter, you must edit further divided menu shown below.

Refer to the Multi Shot menu on page 21 or Time Lapse menu on page 22 for details setup.

● Endless Recording Setup

This item lets you enable or disable recording when the disc space is used up.

This function is not available in REC MODE 2 and conforms to the setting in REC MODE 1.

1. Move the cursor to the ENDLESS parameter in the REC MODE menu by pressing the  or  button.
2. Select either ON or OFF by pressing the  or  button.
 - ON:** Continues recording overwritten the oldest data when the disc space is used up.
 - OFF:** Stops recording when the disc space is used up.

The initial factory setting is OFF.

1. Multiple Shot Recording Setup

This menu lets you set or edit the details of Multiple Shot Recording method.

1. Move the cursor to the CAPTURE MODE parameter in the REC MODE menu by pressing the ☐ or ☐ button.
2. Select MULTI SHOT * by pressing the ☐ or ☐ button, then press the SET button. The MULTI SHOT menu shown below appears on the monitor screen.

MULTI SHOT(MODE1)	
CAPTURE RATE	0.20sec
RECORD FRAMES	2 (0.4sec)
PRE/POST FRAMES	0 / 2
REC PATTERN	-
SENSOR REC	SAME AS ALARM
PRE/POST FRAMES	-
POST REC PATTERN	-

3. Move the cursor to the parameters by pressing the ☐ or ☐ button, then select the desired mode by pressing ☐ or ☐ button.

● Capture Rate

This item let you select intervals (second) of each shot that the multiple freeze pictures are recorded on the disc.

1. Move the cursor to the CAPTURE RATE parameter in the MULTI SHOT menu by pressing the ☐ or ☐ button.
2. Select the desired interval by pressing the ☐ or ☐ button.
The shown below are selected depending on the selected picture pixels.
720 * 480: 0.07, 0.10, 0.17, 0.20, 0.33, 0.50, 1.0, 2.0, 3.0
720 * 240: 0.03, 0.07, 0.10, 0.17, 0.20, 0.33, 0.50, 1.0, 2.0, 3.0

The initial factory setting is 0.20 sec.

● Record Frames

This item let you select quantity of the shots that the multiple freeze pictures are recorded on the disc.

1. Move the cursor to the RECORD FRAME parameter in the MULTI SHOT menu by pressing the ☐ or ☐ button.

2. Select the desired quantity by pressing the ☐ or ☐ button.

The quantities of shots are varied depending on the selected capture rate.

The initial factory setting is 2.

● Pre/Post Frames

This recorder is available to record the picture, that is earlier than an alarm is activated or record standby, during multiple shot recording.

The pictures earlier are called pre frames, and the other lefts are called post frames during activated an alarm.

This item let you select quantity of shots recorded earlier than alarm is activated (pre frames).

1. Move the cursor to the PRE/POST FRAMES parameter in the MULTI SHOT menu by pressing the ☐ or ☐ button.
2. Select the desired quantity by pressing the ☐ or ☐ button.

The parameter indicates quantity of pre and post frames. Therefore the post frames are indicated a balance between pre frames and record frames.

The initial factory setting is 0.

● Recording Pattern

If the CAMERA INPUT parameter is set A + B (CAMERA ID OFF) in the VIDEO INPUT menu, this item lets you select the input A and B to be record on the disc for pre and post frames.

1. Move the cursor to the REC PATTERN parameter in the MULTI SHOT menu by pressing the ☐ or ☐ button.
2. Select the desired recording input by pressing the ☐ or ☐ button as shown below.

Pre Frame Quantity	Parameter	Pre Frame Recorded	Post Frame Recorded
Zero	AA	-	A
	AB	-	A and B
	BB	-	B
One or More	AA/BB	A	B
	AA/AB	A	A and B
	BB/AA	B	A
	BB/AB	B	A and B
	AB/AA	A and B	A
	AB/BB	A and B	B
	AB/AB	A and B	A and B

● Sensor Record

This item lets you select the recording pattern, as same as an alarm activation or separately, when the SENSOR IN terminal located on the rear of the Disc Recorder is activated.

1. Move the cursor to the SENSOR REC parameter in the MULTI SHOT menu by pressing the or button.
2. Select either pattern by pressing the or button.
 - SAME AS ALARM:** Selects recording pattern as same as an alarm activation.
 - DIFF FROM ALARM:** Selects recording pattern set separately.

The initial factory setting is SAME AS ALARM.

3. If DIFF FROM ALARM parameter is set on step 2, edit parameters follows.

• Pre/Post Frames

This item let you select quantities of pre frames when the SENSOR IN terminal is activated.

1. Move the cursor to the PRE/POST FRAMES parameter in the MULTI SHOT menu by pressing the or button.
2. Select the desired quantity to record for pre frames by pressing the or button.

• Post Frame Recording Pattern

This item is only available if the CAMERA INPUT parameter is set A+B (CAMERA ID OFF) in the VIDEO INPUT menu.

This item lets you select the input A and input B to be recorded on the disc for post frames during the SENSOR IN terminal is activated.

1. Move the cursor to the POST REC PATTERN parameter in the MULTI SHOT menu by pressing the or button.
2. Select the desired recording input for post frames by pressing the or button.
 - AA:** Records input A for post frames.
 - BB:** Records input B for post frames.
 - AB:** Records input A and B for post frames.

2. Time Lapse Record Menu

This menu lets you edit the details of Time Lapse Recording.

Note: The Manual Alarm Record, Record Partition and Auto Start are not available in MODE 2.

1. Move the cursor to the CAPTURE MODE parameter in the REC MODE menu by pressing the or button.
2. Select TIME LAPSE * by pressing the or button, then press the **SET** button. The TIME LAPSE menu shown below appears on the monitor screen.

TIME LAPSE(MODE*)	
CAPTURE RATE (RECORD TIME	0.20sec 1h35m)
PRE FRAMES	0
REC PATTERN	-
SENSOR REC	SAME AS ALARM
PRE FRAMES	-
POST REC PATTERN	-
MANUAL REC ALARM	OFF
RECORD PARTITION	80
AUTO START	OFF

3. Move the cursor to the parameters by pressing the or button, then select the desired mode by pressing or button.

● Capture Rate

This item let you select intervals (second) of each shot in time lapse recording.

1. Move the cursor to the CAPTURE RATE parameter in the TIME LAPSE menu by pressing the or button.
2. Select the desired interval by pressing the or button.

The shown below are selected depending on the selected picture pixels.

720 * 480: 0.07, 0.10, 0.17, 0.20, 0.33, 0.50, 1.0, 2.0, ---- 30.0

720 * 240: 0.03, 0.07, 0.10, 0.17, 0.20, 0.33, 0.50, 1.0, 2.0, ---- 30.0

The initial factory setting is 0.20 sec.

● Pre Frames

This item let you select quantities of shots recorded earlier than alarm activation or record standby in manual record (pre frames).

1. Move the cursor to the PRE FRAMES parameter in the TIME LAPSE menu by pressing the or button.
2. Select the desired quantity by pressing the or button.

The initial factory setting is 0.

● Recording Pattern

If the CAMERA INPUT parameter is set A + B (CAMERA ID OFF) in the VIDEO INPUT menu, this item lets you select the input A and input B to be recorded on the disc for pre and post frames.

1. Move the cursor to the REC PATTERN parameter in the TIME LAPSE menu by pressing the or button.
2. Select the desired recording input by pressing the or button as shown below.

Pre Frame Quantity	Parameter	Pre Frame Recorded	Post Frame Recorded
Zero	AA AB BB	- - -	A A and B B
One or More	AA/BB AA/AB BB/AA BB/AB AB/AA AB/BB AB/AB	A A B B A and B A and B A and B	B A and B A A and B A B A and B

● Sensor Record

This item lets you select the recording pattern, as same as an alarm activation or separately, when the SENSOR IN terminal located on the rear of the Disc Recorder is activated.

1. Move the cursor to the SENSOR REC parameter in the TIME LAPSE menu by pressing the or button.
2. Select either pattern by pressing the or button.

SAME AS ALARM: Selects recording pattern as same as an alarm activation.

DIFF FROM ALARM: Selects recording pattern set separately.

The initial factory setting is SAME AS ALARM.

3. If DIFF FROM ALARM parameter is set on step 2, edit parameters follows.

● Pre Frames

This item let you select quantities of pre frames when the SENSOR IN terminal is activated.

1. Move the cursor to the PRE FRAMES parameter in the TIME LAPSE menu by pressing the or button.
2. Select the desired quantity for pre frames by pressing the or button.

● Post Recording Pattern

This item is only available if the CAMERA INPUT parameter is set A + B (CAMERA ID OFF) in the VIDEO INPUT menu.

This item lets you select the input A and input B to be recorded on the disc for post frames during the SENSOR IN terminal is activated.

1. Move the cursor to the POST REC PATTERN parameter in the TIME LAPSE menu by pressing the or button.
2. Select the desired recording input for post frames by pressing the or button.

AA: Records input A for post frames.

BB: Records input B for post frames.

AB: Records input A and B for post frames.

● Manual Time Lapse Alarm Record Setup

This item lets you enable or disable Alarm Record during Time Lapse Recording, when the alarm is activated.

1. Move the cursor to the MANUAL REC ALARM parameter in the TIME LAPSE menu by pressing the or button.
2. Select either ON or OFF by pressing the or button.
 - ON:** Enables Alarm Record in Time Lapse Recording.
 - OFF:** Disables Alarm Record in Time Lapse Recording.

The initial factory setting is OFF.

3. If ON parameter is set on step 2, edit parameters for further divided submenu.
Refer to the Manual Time Lapse Alarm Record menu on page 24 for detail settings.

● Record Partition Setup

This item lets you set minimum quantities of partition that is grouped some of shots (recorded pictures) when the all disc spaces are recorded in time lapse recording.

Use of this function will be able to search the recorded picture easier.

1. Move the cursor to the RECORD PARTITION parameter in the TIME LAPSE menu by pressing the or button.

2. Select the desired shots, 20 to 150, by pressing the or button.

The initial factory setting is 80.

● Auto Start Setup

This item lets you enable or disable Time Lapse Recording automatically, when the Disc Recorder's power is turned on.

1. Move the cursor to the AUTO START parameter in the TIME LAPSE menu by pressing the or button.

2. Select either ON or OFF by pressing the or button.

ON: Enables Time Lapse Recording automatically.

Note: This mode is only valid when the START UP STATUS is set to MANUAL in the SYSTEM menu.

OFF: Disables Time Lapse Recording automatically.

T/L PROG. TIMER: Enables Time Lapse Program Timer recording.

The initial factory setting is OFF.

3. If T/L PROG. TIMER is set on step 2, edit parameters for further divided submenu.

Refer to the Time lapse Program Timer Setup on page 25 for detail setting.

3. Manual Time Lapse Alarm Record Menu

This menu lets you edit the details of Alarm Record during Time Lapse Recording, when the alarm is activated.

1. Move the cursor to the MANUAL REC ALARM parameter in the TIME LAPSE menu by pressing the or button.
2. Select ON by pressing the or button, then press the SET button. The MANUAL REC ALARM menu shown below appears.

MANUAL REC ALARM	
VIDEO PIXEL	720*480/3DIM ON (720*480/3DIM ON)
VIDEO QUALITY	FINE (FINE)
AUDIO RECORD	OFF (OFF)
CAPTURE RATE	0.20 sec (0.20 sec)

● Video Pixels (Resolution) Setup

This item lets you set the picture resolution that is quantities of horizontal and vertical pixels in picture element.

1. Move the cursor to the VIDEO PIXEL parameter in the MANUAL REC ALARM menu by pressing the or button.
2. Select the desired mode by pressing the or button.

720 * 480/3DIM ON: High resolution picture with none blur picture

720 * 480/3DIM OFF: High resolution picture

720 * 240: Lower resolution, but increases recording picture quantities.

The initial factory setting is 720 * 480/3DIM ON.

Note: The parameter 720 * 240 is fixed if the A (CAMERA ID ON) is selected for the CAMERA INPUT parameter in the VIDEO INPUT menu.

● Video Quality (Compression Rate) Setup

This item lets you set the picture quality that is determined by the compression rate of the picture.

1. Move the cursor to the VIDEO QUALITY parameter in the MANUAL REC ALARM menu by pressing the or button.

2. Select desired mode by pressing the ☐ or ☐ button.

FINE: Sets to sharpness enhanced picture quality.

NORMAL: Sets to normal picture quality.

ROUGH: Sets to lower picture quality.

The initial factory setting is FINE.

● Audio Record Setup

This item lets you enable or disable audio record, if applicable.

1. Move the cursor to the AUDIO RECORD parameter in the MANUAL REC ALARM menu by pressing the ☐ or ☐ button.
2. Select either ON or OFF by pressing the ☐ or ☐ button.
 - ON:** Enables audio record.
 - OFF:** Disables audio record.

The initial factory setting is OFF.

● Capture Rate

This item let you select intervals (second) of each shot in time lapse recording.

1. Move the cursor to the CAPTURE RATE parameter in the MANUAL REC ALARM menu by pressing the ☐ or ☐ button.
2. Select the desired interval by pressing the ☐ or ☐ button.
The shown below are selected depending on the selected picture pixels.

720 * 480: 0.07, 0.10, 0.17, 0.20, 0.33, 0.50, 1.0, 2.0, 30.0

720 * 240: 0.03, 0.07, 0.10, 0.17, 0.20, 0.33, 0.50, 1.0, 2.0, 30.0

The initial factory setting is 0.20 sec.

4. Time Lapse Program Timer Setup

This menu lets you edit the details of Time Lapse Program Timer recording.

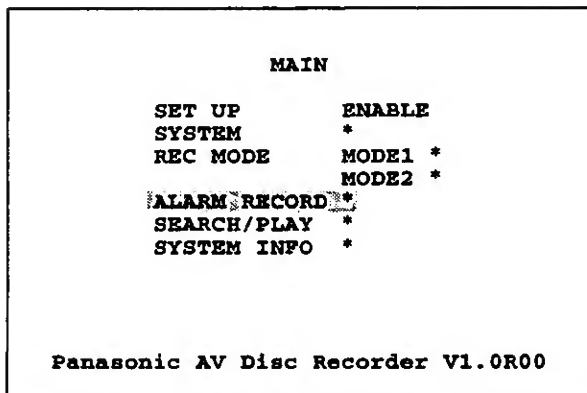
1. Move the cursor to the AUTO START parameter in the TIME LAPSE menu by pressing the ☐ or ☐ button.
2. Select T/L PROG.TIMER by pressing the ☐ or ☐ button, then press the SET button. The TIME LAPSE PROGRAM TIMER menu shown below appears on the monitor screen.

TIME LAPSE PROGRAM TIMER			
	START		END
Sun: OFF	--:--	-	--:--
Mon: OFF	--:--	-	--:--
Tue: OFF	--:--	-	--:--
Wed: OFF	--:--	-	--:--
Thu: OFF	--:--	-	--:--
Fri: OFF	--:--	-	--:--
Sat: OFF	--:--	-	--:--
Daily OFF	--:--	-	--:--

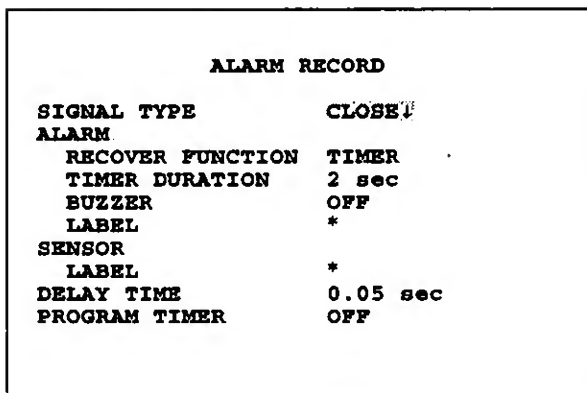
3. Move the cursor to the desired day of the week by pressing the ☐ or ☐ button.
 - Sun-Sat:** Setting recording start and end time for each day of the week.
 - Daily:** Setting recording start and end time for everyday.
4. Select ON by pressing the ☐ or ☐ button and press the set button.
 - ON:** The time settings of selected day are valid for Time Lapse Program Timer recording. To set the time for START and END, select this parameter.
 - OFF:** The time settings of selected day are invalid for Time Lapse Program Timer recording.
5. Move the cursor to the time editing area by pressing the ☐ or ☐ button, then set the time to start and end by pressing the ☐ or ☐ button.
6. To return to setting the day of the week, press the SET UP/ESC button.
7. Repeat the procedures 3 to 6 to edit other days.
8. When satisfied with all programming, press the SET UP/ESC button to return to the TIME LAPSE menu.

■ Alarm Record Menu

This menu lets you edit details of alarm record or internal program timer.



Move the cursor to ALARM RECORD in the MAIN menu by pressing the or button, then press the **SET** button. The ALARM RECORD menu shown below appears on the monitor screen



To select an item from the **ALARM RECORD** menu:

1. Move the cursor to the desired item by pressing the or button.
2. Select desired parameter by pressing the or button.
3. Press the **SET UP/ESC** button to return to the previous MAIN menu, if desired.

● Alarm Input Signal Setup

This item lets you select the alarm signals, either Normally Open or Normally Closed, from the associated alarm sensor.

1. Move the cursor to the SIGNAL TYPE parameter in the ALARM RECORD menu by pressing the or button.
2. Select either CLOSE or OPEN by pressing the or button.

CLOSE: Accepts the alarm signals, Normally Open, from the associated alarm sensor.

OPEN: Accepts the alarm signals, Normally Closed, from the associated alarm sensor.

The initial factory setting is CLOSE

● Alarm Recover Output Function Setup

This item lets you select functions of the ALARM RECOVER OUT terminal on the Terminal Board located on the rear of the Disc Recorder.

1. Move the cursor to the RECOVER FUNCTION parameter in the ALARM RECORD menu by pressing the or button.
2. Select desired function by pressing the or button.

TIMER: Supplies output signal when the Alarm Record is terminated.

MANUAL/EXT: Supplies output signal, when the ALARM RESET button is pressed or the alarm reset signal is received from externally.

The initial factory setting is TIMER.

● Alarm Output Duration Setup

This item lets you select duration of alarm signal output and ringing duration of the alarm buzzer when alarm is activated.

The alarm is automatically reset after the programmed duration has passed.

1. Move the cursor to the TIMER DURATION parameter in the ALARM RECORD menu by pressing the or button.
2. Select alarm duration between 1 second and 5 minutes as shown below by pressing the or button.

1 sec - 30 sec, 1 min, 2 min, 3 min, 4 min, 5 min

The initial factory setting is 2 sec.

● Alarm Buzzer Setup

This item lets you enable or disable alarm buzzer ringing when an alarm is activated.

1. Move the cursor to the BUZZER parameter in the ALARM RECORD menu by pressing the or button.
2. Select ON or OFF by pressing the or button.

- ON:** Enables alarm buzzer ringing.
OFF: Disables alarm buzzer ringing.

The initial factory setting is OFF.

● Alarm Label Setup

Refer to the Label Setup on page 30 for details setting.

● Sensor Label Setup

Refer to the Label Setup on page 30 for details setting.

● Delay Time Setup

This item lets you select delay time that the Disc Recorder start recording when an alarm is activated.

1. Move the cursor to the DELAY TIME parameter in the ALARM RECORD menu by pressing the or button.
2. Select the desired time as shown below by pressing the or button.

OFF, 0.05 sec, 0.10 sec, 0.30 sec, 0.50 sec, 1 sec, 2 sec 10 sec

The initial factory setting is 0.05 sec.

● Program Timer Setup

This item lets you enable or disable recording by the timer internally.

1. Move the cursor to the PROGRAM TIMER parameter in the ALARM RECORD menu by pressing the or button.
2. Select either ON or OFF by pressing the or button.

ON: Enables recording by programmed timer internally.

To program the timer, it is required to edit the sub menu.

Refer to the Program Timer menu shown below for details setting.

OFF: Disables recording by programmed timer internally.

The initial factory setting is OFF.

● Program Timer Menu

This menu lets you edit the program timer for recording. There are two timers assigned each day.

1. Move the cursor to the PROGRAM TIMER parameter in the ALARM RECORD menu by pressing the or button.
2. Select ON (by pressing the or button, then press the **SET** button. The PROGRAM TIMER menu shown below appears on the monitor screen.

PROGRAM TIMER			
Sun	PROG1	*	
Mon	PROG1	*	
Tue	PROG1	*	
Wed	PROG1	*	
Thu	PROG1	*	
Fri	PROG1	*	
Sat	PROG1	*	
		PROG1	START END
		MODE1	08:00-20:00
		MODE2	20:00-08:00
		PROG2	START END
		MODE1	00:00-00:00
		MODE2	00:00-00:00

3. Move the cursor to the desired day parameter by pressing the or button, then select OFF or

PROG 1 or 2 by pressing the or button.

PROG1: Records with the pattern that is programmed on PROG1.

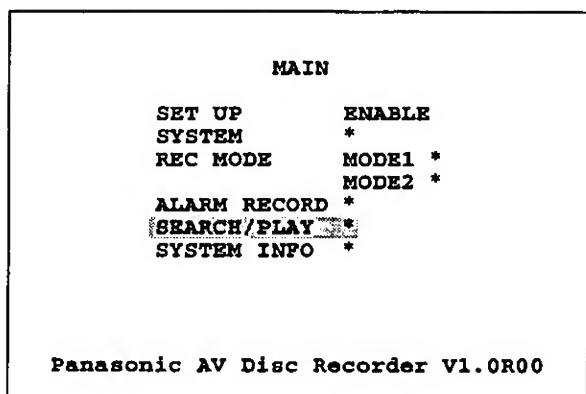
PROG2: Records with the pattern that is programmed on PROG2.

OFF: Disables record with the program timer.

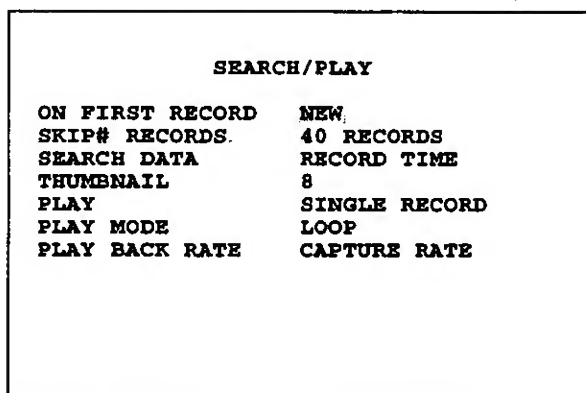
4. To edit the selected program, press the **SET** button to move the cursor to the selected program editing area.
5. Move the cursor to the position to be edited by pressing the , , or button.
6. Select the desired time by pressing the (+) or (-) button.
7. When satisfied with the programming of schedules, press the **SET UP/ESC** button to move the cursor to the day parameter.
8. Repeat the procedure 3 to edit other days.
9. When satisfied with all programming, press the **SET UP/ESC** button to return to the previous ALARM RECORD menu.

■ SEARCH / PLAY Menu

This menu lets you edit details of Search (Find) or Playback mode.



Move the cursor to SEARCH/PLAY in the MAIN menu by pressing the or button, then press the SET button. The SEARCH/PLAY menu shown below appears on the monitor screen.



To select an item parameter from the **SEARCH/PLAY** menu:

1. Move the cursor to the desired item parameter by pressing the or button.
2. Select the desired parameter by pressing the or button.
3. Press the **SET UP/ESC** button to return to the previous MAIN menu, if desired.

● Search Display Setup

This item lets you select initial display in search, either the newest or oldest chronological order.

1. Move the cursor to the ON FIRST RECORD parameter in the SEARCH/PLAY menu by pressing the or button.
2. Select either NEW or OLD by pressing the or button.

NEW: Displays the record chronological order in newest.

OLD: Displays the record chronological order in oldest.

The initial factory setting is NEW.

● Skip Records Setup

This item lets you select the record quantities that is skipped by pressing the Forward Step (▶▶) or Reverse Step (◀◀) button during playback.

1. Move the cursor to the SKIP # RECORDS parameter in the SEARCH/PLAY menu by pressing the or button.
2. Select the desired records quantity to be skipped shown below by pressing the or button.

40 → 80 → 120 → 160 → 200 RECORD

The initial factory setting is 40 RECORDS.

● Search Data Setup

This item lets you select the search mode directly, either by recorded time or record number, when searching the desired record after the FIND button is pressed

1. Move the cursor to the SEARCH DATA parameter in the SEARCH/PLAY menu by pressing the or button.

2. Select either RECORD TIME or RECORD NUMBER by pressing the or button.

RECORD TIME: Searches the record by the recorded time on the disc.

RECORD NUMBER: Searches the record by the record number on the disc.

The initial factory setting is RECORD TIME.

● Thumbnail Display Setup

This item lets you select quantities of thumbnail display displayed on the monitor screen when searching the desired record from the thumbnail display.

1. Move the cursor to the THUMBNAIL parameter in the SEARCH/PLAY menu by pressing the or button.
2. Select either 8 or 16 by pressing the or button.
 - 8:** Displays eight (8) thumbnail displays maximally on the monitor screen.
 - 16:** Displays sixteen (16) thumbnail displays maximally on the monitor screen.

The initial factory setting is 8.

● PLAY Button Setup

This item lets you select quantities of record that is displayed on the monitor screen when the PLAY button is pressed.

1. Move the cursor to the PLAY parameter in the SEARCH/PLAY menu by pressing the or button.
2. Select the desired mode pressing the or button.

SINGLE RECORD: Displays only one record by pressing the PLAY button.

ALL RECORD: Displays all records continuously by pressing the PLAY button.

The initial factory setting is SINGLE RECORD.

● Playback Mode Setup

This item lets you select the playback mode according to the record quantities during playback.

1. Move the cursor to the PLAY MODE parameter in the SEARCH/PLAY menu by pressing the or button.
2. Select either LOOP or SINGLE CYCLE by pressing the or button.
 - LOOP:** Repeats the playback continuously after the selected records are played back.
 - SINGLE CYCLE:** Becomes to await next operation after the selected records are played back.

The initial factory setting is LOOP.

● Playback Rate Setup

This item lets you select the playback rate during playback.

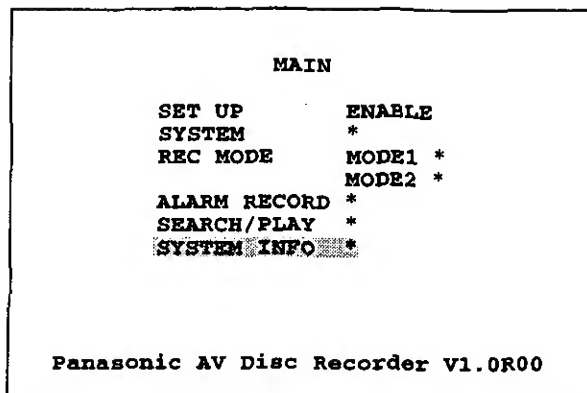
1. Move the cursor to the PLAY BACK RATE parameter in the SEARCH/PLAY menu by pressing the or button.
2. Select the desired rate shown below by pressing the or button.

0.03, 0.07, 0.10, 0.17, 0.20, 0.33, 0.50, 1.0, 2.0, 3.0 10.0 sec, CAPTURE RATE

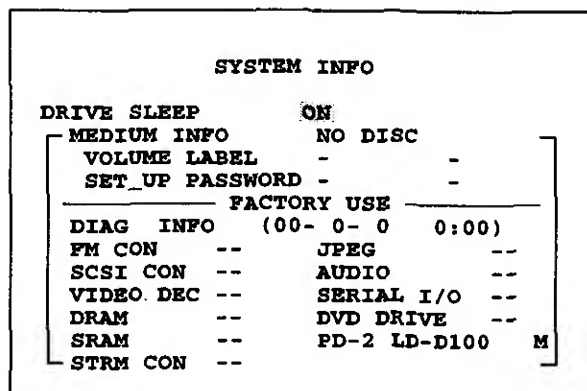
The initial factory setting is CAPTURE RATE.

■ System Information Menu

This menu lets you select a condition of DVD Drive and displays a status of the Disc Recorder.



Move the cursor to SYSTEM INFO in the MAIN menu by pressing the or button, then press the **SET** button. The SYSTEM INFO menu shown below appears on the monitor screen.



● Drive Condition Setup

This item lets you select active condition of the DVD-RAM Drive.

1. Move the cursor to the DRIVE SLEEP parameter in the SYSTEM INFO menu by pressing the or button.
2. Select either ON or OFF by pressing the or button.
ON: Stops DVD-RAM Drive automatically if no operation is made for thirty (30) minutes.
OFF: Activates DVD-RAM drive continuously.

The initial factory setting is ON.

Note: It is recommended to set OFF position if recording frequently, such as a few second intervals in alarm record.

The items except above in the menu are only displayed system status of this recorder and they are disabled editing.

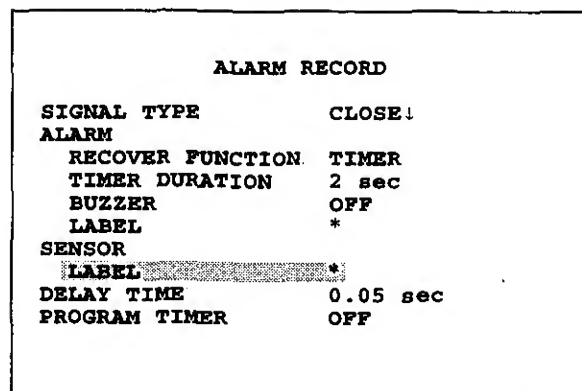
■ Label Setup

When an alarm or sensor signal is received, this recorder is enabled display on the monitor screen where an alarm is activated.

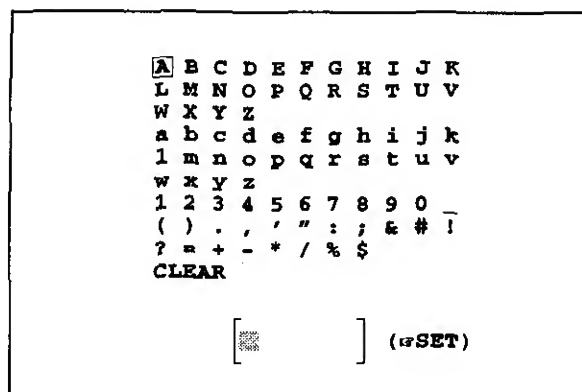
There are three (3) labels available. Each label is composed of eight (8) characters.

● Alarm or Sensor Label Setup

1. Move the cursor to ALARM RECORD in the MAIN menu by pressing the or button, then press the **SET** button. The ALARM RECORD menu shown below appears on the monitor screen.



2. Move the cursor to ALARM LABEL (or SENSOR LABEL) in the ALARM RECORD menu by pressing the or button then press the **SET** button. The label editing menu shown below appears.



3. Move the cursor on the desired character to be set in the table by pressing the , , , or button.
4. Press the **SET** button to pick up the character, and place it in the editing area.
5. Repeat the above procedures 3 and 4 until the label is completed.
6. If a wrong character is selected, press the (+) or (-) button to move the cursor in the editing area. Then press the **SET** button to overwrite the character selected in the table.

Note: Press the (+) button to move the cursor to the right, or press the (-) button to move the cursor to the left.

7. To clear the characters in the editing area, move cursor to CLEAR in the table by pressing the ☐ or ☐ button, then press the **SET** button.
8. Press the **SET UP/ESC** button to execute the editing and return to the previous ALARM RECORD menu.

● Volume Label Setup

1. Press the (-) and (+) button simultaneously for two (2) seconds or more. The LOGICAL FORMAT menu shown below appears.

LOGICAL FORMAT	
FORMAT	EXECUTE
VOLUME LABEL	*
DISC PASSWORD	*

START: PRESS SET KEY

2. Move the cursor to VOLUME LABEL in the LOGICAL FORMAT menu by pressing the ☐ or ☐ button, then press the **SET** button. The label editing menu shown below appears on the monitor screen.

A	B	C	D	E	F	G	H	I	J	K
L	M	N	O	P	Q	R	S	T	U	V
W	X	Y	Z							
a	b	c	d	e	f	g	h	i	j	k
l	m	n	o	p	q	r	s	t	u	v
w	x	y	z							
1	2	3	4	5	6	7	8	9	0	_
()	.	,	'	"	:	;	&	#	!
?	=	+	-	*	/	%	\$			
CLEAR										

☐ (SET)

3. Edit the label similar to the Alarm Label above.
4. Press the **SET UP/ESC** button to execute the editing and return to the previous VOLUME LABEL menu.

■ Password Setup

It is available to add the safeguard function by setting password that protects to erase data, change setup and false movement by mistaken from the others.

There are three (3) password available as shown below.

Setup Password: Protects to change setup.

Format Password: Protects to formatted disc.

Disc Password: Protects to played back specific record.

● Setup Password Menu

1. Move the cursor to the SET UP parameter in the MAIN menu by pressing the ☐ or ☐ button.

MAIN	
SET UP	PASSWORD*
SYSTEM	*
REC MODE	MODE1 *
	MODE2 *
ALARM RECORD	*
SEARCH/PLAY	*
SYSTEM INFO	*

Panasonic AV Disc Recorder V1.0R00

2. Select PASSWORD by pressing the ☐ or ☐ button, then press the **SET** button. The SET UP PASSWORD table shown below appears on the monitor screen.

SET_UP PASSWORD												
A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	0			
CLEAR												



☐ (SET)

3. Move the cursor on the desired character to be set in the table by pressing the ☐, ☐, ☐ or ☐ button.
4. Press the **SET** button to pick up the character, and place it in the password area.
5. Repeat the above procedures 3 and 4 until the password is completed.

6. If a wrong character is selected, press the (+) or (-) button to move the cursor in the password area.

Note: Press the (+) button to move the cursor to the right, or press the (-) button to move the cursor to the left.

Then press the SET button to overwrite the character selected in the table.





7. To clear the characters in the password area, move cursor to CLEAR in the table by pressing the  or  button, then press the SET button.
8. Press the SET UP/ESC button for two (2) seconds or more to execute the setting and return to the normal view.





● Format Password Menu

1. Press the (-) and (+) button simultaneously for two (2) seconds or more. The LOGICAL FORMAT menu shown below appears.

LOGICAL FORMAT

FORMAT	PASSWORD**
VOLUME LABEL	*
DISC PASSWORD	*


 **START**  **PRESS**  **SET**  **KEY**

2. Move the cursor to the FORMAT parameter in the LOGICAL FORMAT menu by pressing the  or  button.
3. Select PASSWORD by pressing the  or  button, then press the SET button. The FORMAT PASSWORD table shown below appears on the monitor screen.

FORMAT PASSWORD

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	0			

CLEAR

 **]** (**SET**)





4. Edit the password similar to the setup password above.
5. Press the SET UP/ESC button for two (2) seconds or more to execute the setting and return to the normal view.



● Disc Password Menu

1. Press the (-) and (+) button simultaneously for two (2) seconds or more. The LOGICAL FORMAT menu shown below appears.

LOGICAL FORMAT

FORMAT	EXECUTE
VOLUME LABEL	*
DISC PASSWORD	*


 **START**  **PRESS**  **SET**  **KEY**

2. Move the cursor to DISC PASSWORD in the LOGICAL FORMAT menu by pressing the  or  button, then press the SET button. The DISC PASSWORD table shown below appears on the monitor screen.

DISC PASSWORD

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	0			

CLEAR

 **]** (**SET**)

3. Edit the password similar to the setup password above.
4. Press the SET UP/ESC button for two (2) seconds or more to execute the setting and return to the normal view.

● Identify the Password

To identify the password, follow the procedures shown below.

For example, to identify the setup password:

1. Confirm that the parameter PASSWORD is selected in the MAIN menu, then press the **SET** button. The SET UP PASSWORD table shown below appears on the monitor screen.

SET_UP PASSWORD															
A	B	C	D	E	F	G	H	I	J	K	L	M			
N	O	P	Q	R	S	T	U	V	W	X	Y	Z			
1	2	3	4	5	6	7	8	9	0						
CLEAR															
										ENTER					
										[] (←SET)					

2. Move the cursor on the desired character in the table by pressing **←**, **→**, **↑** or **↓** button.
3. Press the **SET** button to pick up the character, and place it in the password area.
4. Repeat the above procedures 2 and 3 until the password is completed.
5. If a wrong character is selected, press the (+) or (–) button to move the cursor in the password area.

Note: Press the (+) button to move the cursor to the right, or press the (–) button to move the cursor to the left.

Then press the SET button to overwrite the character selected in the table.

6. Move the cursor to ENTER in the table, then press the **SET** button.
"OK" or "NG" appears on the lower center of the monitor screen.

OK: Correct password, enables editing the setup menu.

NG: Incorrect password, repeat the procedures above.

7. If the password is correct, the display will return to the previous MAIN menu.

● Renew or Clear the Password

To renew or clear the password, follow the procedures shown below.

1. Display the password editing table to be renew or cleared password after identified password.

For example, to renew or clear the setup password, the password previously set is displayed on the password area in the menu.

SET_UP PASSWORD															
A	B	C	D	E	F	G	H	I	J	K	L	M			
N	O	P	Q	R	S	T	U	V	W	X	Y	Z			
1	2	3	4	5	6	7	8	9	0						
CLEAR															
										[1231] (←SET)					

2. Move the cursor on the desired character to be set in the table by pressing the **←**, **→**, **↑** or **↓** button.
3. Then press the **SET** button to pick up the character, and place it in the password area.
4. Repeat the above procedures 2 and 3 until the new password is completed.
5. Or to clear the characters in the password area, move cursor to CLEAR in the table by pressing the **←** or **→** button, then press the **SET** button.
6. Press the **SET UP/ESC** button for two (2) seconds or more to execute the setting and return to the normal view.

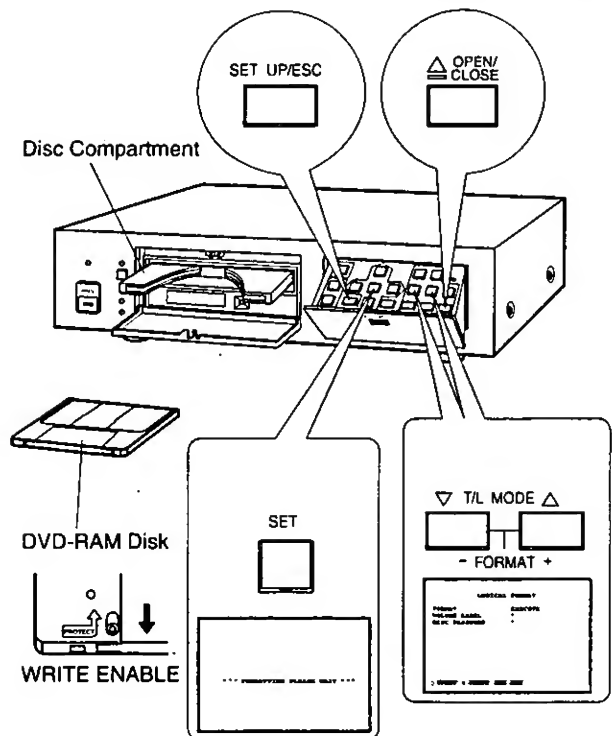
OPERATING PROCEDURES

FORMAT DISC

The DVD-RAM Disc is required formatting to store the record with the Disc Recorder.

The procedures shown below describe to format the DVD-RAM Disc.

1. Turn on the Power Switch that is located on the rear of Disc Recorder.
2. Press the Disc Cover and Control Panel to open the covers located on the front of the Disc Recorder.
3. Press the **OPEN/CLOSE** button in the Control Panel to slot out the disc compartment.
4. Confirm that the disc is enabled write, then insert the disc into the compartment that the label on the disc is placed in front.
5. Press the **OPEN/CLOSE** button in the Control Panel to slot in the compartment.
6. Press the **(-)** and **(+)** button simultaneously for two (2) seconds or more. The LOGICAL FORMAT menu shown below appears.
If the disc, that is not formatted, is inserted in the compartment, the LOGICAL FORMAT menu is automatically displayed on the monitor screen.
7. Move the cursor to the **FORMAT** parameter in the menu by pressing the **[Left]** or **[Right]** button, then confirm that the parameter **EXECUTE** is selected.
8. Press the **SET** button to start the logical format, then the formatting will be terminated about 30 seconds later.
9. To discontinue the formatting, press the **SET UP/ESC** button for two (2) seconds or more.
10. To take a disc out in the compartment, press the **OPEN/CLOSE** button.
Then press the **OPEN/CLOSE** button again to slot in the compartment.
11. Close the Disc Cover and Control Panel.



● Logical Format Menu

This menu lets you format to record or play back the DVD-RAM Disc in the Disc Recorder.

Also this menu is enabled setting shown below in addition.

Format Password Setup: Sets up and identify the password to protect format from the others.

Refer to the Password Setup on page 31 for detail settings.

Volume Label Setup: Assigns volume label on the disc presently used.

Refer to the Label Setup on page 30 for detail settings.

Disc Password Setup: Sets up and identify the password to protect playback the specific record from the others.

Refer to the Password Setup on page 32 for detail settings.

Physical Format Display: See below.

Note: If the **PASSWORD** is attempted for the **FORMAT** parameter in this menu, it is disabled for formatting the disc.

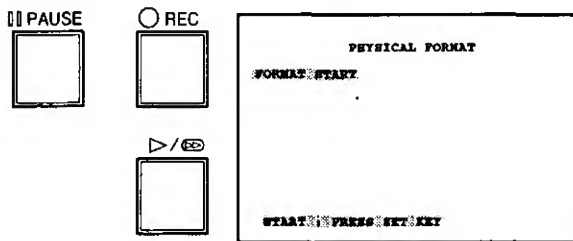
Press the **SET** button to display the Password menu, then identify the password. After these procedures, start formatting the disc.

● Physical Format Menu

This menu lets you format to inspect all sector on the DVD-RAM Disc and substitute a defective sector in addition Logical Format.

Normally, use the Logical Format for formatting the disc.

1. Press the **(-)** and **(+)** button simultaneously for two (2) seconds or more. The LOGICAL FORMAT menu appears on the monitor screen described previously.
2. Press the **REC**, **PAUSE** and **PLAY** button simultaneously.
The Physical Format menu shown below appears.



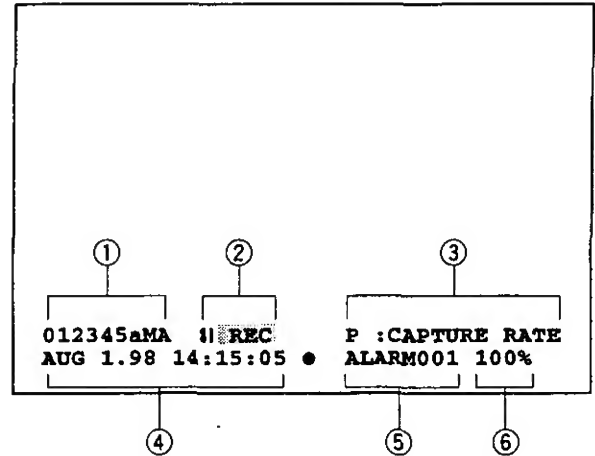
3. Press the **SET** button to start the physical formatting.
To return to the LOGICAL FORMAT menu, press the **SET UP/ESC** button.

Note: If starting the physical format, it will take about an hour for formatting.
No operations are disabled by pressing the buttons during formatting the disc, but do not turn off the power of Disc Recorder.
Turn off the power may be occurred to damage the disc.

STATUS DISPLAY

While recording or playing back the record, the display shown below is displayed on the monitor screen.

This display indicates a system status of the Disc recorder.



- 1 Record Number 012345 a S A
(1) (2) (3) (4)
(1) Indicates Record Number in 6-digit
(2) Indicates "a" at 7-figure if the audio is recorded.
(3) Indicates Record Mode at 8-figure
S: Single Shot M: Multiple Shot
T: Time Lapse
(4) Indicates alarm or sensor record at 9-figure
A: Alarm Record S: Sensor Record
T: Unusual Temperature during the recording
- 2 Record or Playback Status
- 3 Caution or Warning
- 4 Date and Time
Indicates current date and time during recording
Indicates recorded date and time during playback
- 5 Alarm or Sensor Label
- 6 Disc Space
 - Indicates the disc space left
"OVER" is displayed when the disc is overwritten on endless mode.
 - Indicates video input in playback

RECORDING

■ Recording Method

The WJ-DR200 Disc Recorder has three kinds of recording method as shown below, select one of recording method to meet your requirement.

Refer to the Record Mode Menu on page 19 for details of settings.

Single Shot Record: Records a freeze picture to a command or an alarm input.

Multiple Shot Record: Records continuously multiple freeze pictures to a command or an alarm input.

Time Lapse Record: Records freeze pictures continuously at the same interval until the STOP button is pressed, while the recorder is operated manually.
Or records freeze pictures continuously at the same interval while an alarm is activated.

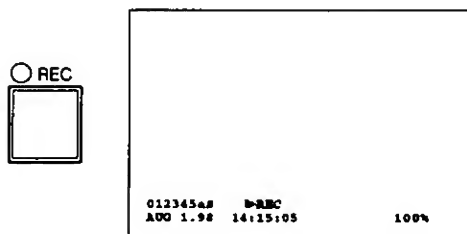
■ Manual Record

The procedure shown below describes to record manually in selected method.

Caution: Confirm that the **ALARM REC** indicator is not lit on the front panel of the recorder.
If the indicator is lit on the panel, press the **ALARM REC STANDBY** button in the control panel of the recorder to turn off the indicator.

● Manual Record

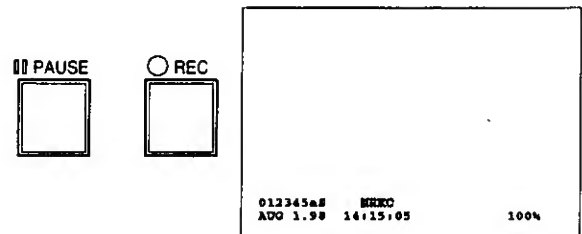
1. Press the **REC** button.
○ **REC** is displayed at the lower center on the monitor screen, and start recording in selected method.



2. To stop recording, press the **STOP** button.

● Manual Record with Standby

1. Press the **REC** button while holding down the **PAUSE** button.
○ **REC** is displayed at the lower center on the monitor screen, and becomes on recording standby in selected method.



2. Press the **REC** button.
○ **REC** is displayed at the lower center on the monitor screen, and start recording in selected method.
3. It ends the recording automatically after the selected shot is recorded on the disc, and becomes on recording standby.
○ **REC** is displayed at the lower center on the monitor screen.
4. Press the **REC** button again to record next shot.
5. To stop recording, press the **STOP** button.

■ Alarm Record

The procedure shown below describes to record an alarm automatically in selected method.

Refer to the Alarm Record menu on page 25 for details of settings.

1. Press the **ALARM REC STANDBY** button in the control panel of the recorder.
Confirm that the **ALARM REC** indicator is lit on the front panel of the recorder.
Note: If the **ALARM REC** indicator is not lit, press the **ALARM REC STANDBY** button again.
2. Recording will be started in selected method automatically when an alarm or sensor is activated.
It ends the recording automatically after the selected shot or time passed.
3. The recorder repeats the procedure 2 until the **ALARM REC STANDBY** button is pressed.
4. To stop an alarm record, press the **ALARM REC STANDBY** button.

■ Series Record

This recorder enables record automatically in series when two recorders are connected.

Refer to the Series Record in the SYSTEM menu on page 19 for detail settings.

There are three (3) series recording available to meet your requirement.

Alternate Alarm Record

The slave recorder starts recording in the alarm record mode if the disc space is filled in the master recorder.

Alternate Time Lapse Record

The slave recorder starts recording in the time lapse record mode, if the disc space is filled in the master recorder while the master recorder is recording in the time lapse mode.

Alarm Record with Subsidiary Record

The SLAVE recorder starts recording when another alarm signal is received during the MASTER recorder is recording.

Notes:

- Make sure to confirm the setting while the disc recorders are operated in series record mode.
- Select the SERIES REC parameter in the SYSTEM menu to "MASTER" for first recorder or "SLAVE" for second ones.
If more than three recorders are connected, select "SLAVE" except the first ones.
- Select "OFF" for ENDLESS parameter in the REC MODE 1 menu while recording alternately in the alarm record or time lapse record.
- To perform Alternate Alarm Record or Alarm Record with Subsidiary Record, select the same recording method.

● Alternate Alarm Record

Refer to the Series Record 1 on page 13 for detail connections.

1. Select "ALARM REC" for START UP STATUS parameter from the SYSTEM menu of both recorder.

SYSTEM			
CLOCK		* AUG 1.98	0:00
START UP STATUS		ALARM REC	
SERIAL SET UP		*	
VIDEO INPUT		*	
STATUS DISPLAY		ON	
ALARM DISPLAY		ON	
DISPLAY POSITION		*	
SERIES REC		MASTER	
SERIES REC OUT		CLOSE	
DISC LED FUNCTION		FULL	
BUZZER		ON	

2. Insert the disc write enabled to both recorders, then press the **ALARM REC STANDBY** button on the MASTER recorder.

After above, press the **ALARM REC STANDBY** button on the SLAVE recorder.

The master recorder starts recording in the alarm record mode.

If the disc space is filled in the master recorder, the slave recorder starts recording.

3. While the slave recorder is recording, insert the next disc write enabled into the master recorder then press the **ALARM REC STANDBY** button on the master recorder.

The Master recorder will start recording when the disc space is filled in the slave recorder.

● Alternate Time Lapse Record

Refer to the Series Record 2 on page 13 for detail connections.

1. Select "MANUAL" for START UP STATUS parameter and "CLOSE" for SERIES REC OUT parameter from the SYSTEM menu of both recorder.

SYSTEM			
CLOCK		* AUG 1.98	0:00
START UP STATUS		MANUAL	
SERIAL SET UP		*	
VIDEO INPUT		*	
STATUS DISPLAY		ON	
ALARM DISPLAY		ON	
DISPLAY POSITION		*	
SERIES REC		MASTER	
SERIES REC OUT		CLOSE	
DISC LED FUNCTION		FULL	
BUZZER		ON	

2. Select "ON" for AUTO START parameter from the TIME LAPSE (MODE 1) menu of both recorder.

TIME LAPSE (MODE 1)	
CAPTURE RATE	0.20 sec
(RECORD TIME	1h35m)
PRE FRAMES	0
REC PATTERN	-
SENSOR REC	SAME AS ALARM
PRE FRAMES	-
POST REC PATTERN	-
MANUAL REC ALARM	OFF
RECORD PARTITION	50
AUTO START	ON

3. Insert the disc write enabled to both recorders, then press the **REC** button on the MASTER recorder.
The master recorder starts recording in the time lapse record mode.
If the disc space is filled in the master recorder, the slave recorder starts recording.
4. While the slave recorder is recording, insert the next disc write enabled into the master.
The Master recorder will start recording in the time lapse record mode when the disc space is filled in the slave recorder.

● Alarm Record with Subsidiary Record

Refer to the Series Record 2 on page 13 for detail connections.

1. Select "ALARM REC" for START UP STATUS parameter and "OPEN" for SERIES REC OUT parameter from the SYSTEM menu of the MASTER recorder.

SYSTEM		
CLOCK	* AUG 1.98	0:00
START UP STATUS	ALARM REC	
SERIAL SET UP	*	
VIDEO INPUT	*	
STATUS DISPLAY	ON	
ALARM DISPLAY	ON	
DISPLAY POSITION	*	
SERIES REC	MASTER	
SERIES REC OUT	OPEN	
DISC LED FUNCTION	FULL	
BUZZER	ON	

2. Insert the disc write enabled, then press the **ALARM REC STANDBY** button on the MASTER recorder.
The master recorder stands by recording.
3. Repeat the procedure 1 and 2 for SLAVE recorder.
The SLAVE recorder starts recording when another alarm signal is received during the MASTER recorder is recording.

■ Other Record Function

This recorder is enabled various recording functions as shown below by use of setup menu.

● Time Lapse Record with Auto Start

The recorder starts recording automatically in the Time Lapse Record mode, when the recorder power is turned on.

Refer to the Time Lapse Record menu on page 22 for details of settings.

T/L Prog. Timer (Time Lapse Program Timer) recording is available to start and stop recording by setting the time of the day and the day of the week.

If the T/L Prog. Timer recording is attempted, the recorder becomes automatically to the status record standby for the T/L Prog. Timer record when no operation is made for ten (10) minutes.

To start the T/L Prog. Timer record immediately, press the REC button.

Refer to Time Lapse Program Timer Recording on page 25 for details of settings.

● Manual Time Lapse Alarm Record

While the recorder is recording in the Time Lapse mode with manually or auto start, the recorder receives an alarm from the ALARM IN terminal of the Terminal Board.

The recorder records an alarm according to the setup in time lapse record mode.

Refer to the MANUAL REC ALARM menu on page 24 for details settings.

The record number is renewed at the beginning and end of the alarm record. Also the recording duration is according to the ALARM TIMER DURATION in the ALARM RECORD menu.

● Program Timer Record.

This Recorder enables record according to the time of day and day of the week.

Each day is divided into two time zones, and applied one of two recording modes for each time zone.

Refer to the PROGRAM TIMER menu on page 27 for detail settings.

If the program timer record is attempted, the recorder becomes automatically to the status record standby for the program record when no operation is made for ten (10) minutes.

To start the program record immediately, press the ALARM REC STANDBY button.

Notes:

- Recording the playback picture from the VCR is not available. Even if the playback picture is recorded, recorded picture will be played back irregularly.
- If the camera and the peripherals are connected incorrectly, playback picture will be played back irregularly.

Refer all work related to the connection to qualified service personnel or system installers.

PLAYBACK

■ Basic Playback

There are two (2) playback mode available basically as shown below.

Playback/Reverse Playback

Plays back a record lately recorded in forward or backward

Playback/Reverse Playback with auto forward

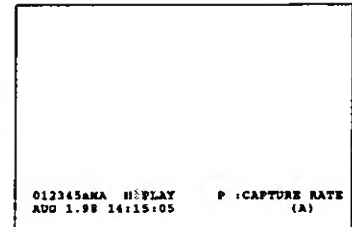
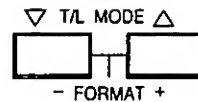
Plays back all records continuously in forward or backward

1. Press the **PLAY** ▷/◀ (or ◀/◀) button.
▷/◀ (or ◀/◀) is displayed on lower center of the monitor screen, and displays the picture(s) recorded lately in forward (or backward).
2. During the playback (or reverse playback), press the **PLAY** ▷/◀ (or ◀/◀) button to display the picture(s) in backward (or forward).
3. During the playback (or reverse playback), press the **SET** button.
▶ ALL (or ◀ ALL) is displayed on the lower center of the monitor screen, and displays all recorded pictures continuously in forward (or backward).
Press the **SET** button to toggle the continuous playback on and off during the playback.
4. During the playback (or reverse playback), press the **PAUSE** button.
is displayed on the lower center of the monitor screen, and pauses playback.
5. To release the pause mode, press the **PLAY** ▷/◀ (or ◀/◀) button.
6. To stop the playback, Press the ☐ **STOP** button.

■ Playback Select Function

This function lets you select the playback picture when the two cameras or video multiplexer are connected to the Disc Recorder.

1. While the recorder is paused playback, press the (-) or (+) button repeatedly.
The input channels or camera ID numbers are displayed on the lower right corner of the monitor screen as shown below.



2. Then press the **PLAY BACK SELECT** button to display the picture that is selected by pressing the (-) or (+) button previously.
The recorder plays back in the mode that was previously paused by the **PAUSE** button.
3. To release this mode, select "AB" or "ALL" by passing the (-) or (+) button, then press the **PLAY BACK SELECT** button.

Note: It may be occurred that the first picture differs from the selected, when the camera ID is selected.

■ Jump or Skip Record Playback

This function lets you jump to previous or next record during the playback.

There are two (2) jump mode available.

One of jump is moved one record forward (backward) from the record presently selected, and the other is skipped specified records at once that is selected in the setup menu.

After the jump or skip records, the recorder plays back in the mode that was previously paused by the **PAUSE** button.

● Jump Record Function

Press the ☐ (or ☐) button during the playback.





▷▷ (or ◀◀) is displayed on the lower center of the monitor screen, and moves one record forward (or backward) from the record presently selected.

● Skip Record Function

Press the ☐ (or ☐) button for two (2) seconds or more during the playback.



▷▷▷▷ (or ◀◀◀◀) is displayed on the lower center of the monitor screen, and move to the record, that is skipped specified records forward (or backward) at once, from the presently selected record.

● Forward or Reverse One Frame Playback

Press the  (or ) button while the playback is paused,  (or ) is displayed on the lower center of the monitor screen, and moves to one frame forward (or one frame backward) from the frame that was previously paused by the PAUSE button.

■ Other Playback Function

● Search Forward or Backward

While holding down the **PLAY**  (or ) button during the playback (or reverse playback), the recorder searches the records backward (or forward).

● Variable Speed Playback

Press the $\Delta+$ (or $\nabla-$) button to decrease (or increase) playback at variable speed during the playback (or reverse playback).

■ Search Record Function

The WJ-DR200 Disc Recorder has three kinds of search record function.

The shown below describes the procedures to search and plays back the records.

Refer to the Search/Play menu on page 28 for details of settings


● Search by List



This function lets you search the records by observing the list on the monitor screen.



Note: Confirm that the ALARM REC indicator is not lit.





If the indicator is lit, press the ALARM REC STANDBY button to release the alarm record mode.

1. Press the **INDEX** button to display the recorded list on the monitor screen as shown below. (This button toggles display state in list and thumbnail on the monitor screen.)

INDEX 	<pre> NO RECORD TIME 0123456789 AUG 1.98 14:59:55 012347 MA AUG 1.98 14:58:25 012346 M AUG 1.98 14:54:15 012345 SS AUG 1.98 13:10:10 012344aSA AUG 1.98 12:55:30 012343aSA AUG 1.98 12:55:00 012342 SS AUG 1.98 12:35:30 012341 S AUG 1.98 12:25:30 (012348 RECORDS EXIST) 1.a=Audio 2.S=SINGLE-SHOT M=MULTI-SHOT T=TIME-LAPSE 3.A=ALARM S=SENSOR T=THERMAL </pre>

2. Press the  (or ) button to select next page (or previous page), if applicable.

Note: Press the  (or ) button for two (2) seconds or more to move the cursor to the record that is skipped number of records forward (or backward) by setting the SKIP#RECORD parameter in the SEARCH/PLAY menu.

3. Select the desired record to be displayed on the monitor screen pressing the  or  button.
4. Press the **PLAY**  (or ) button to play back the selected record backward (or forward).
5. To display the list again, press the **INDEX** button again.
6. To stop playback or release the search function, press the **STOP** button.


● Search by Thumbnail Display

This function lets you search the records by observing the thumbnail display on the monitor screen.

Note: Confirm that the ALARM REC indicator is not lit.

If the indicator is lit, press the ALARM REC STANDBY button to release the alarm record mode.



1. Press the **INDEX** button to display the recorded list described previously.
2. Press the **INDEX** button again. (This button toggles display state in list and thumbnail on the monitor screen.)
The recorded pictures are displayed in thumbnail as shown below on the monitor screen.







INDEX 				
	012346 MA	012347 MA	012348 M	012345 SS
	AUG 1.98	AUG 1.98	AUG 1.98	AUG 1.98
	14:59:55	14:58:25	14:54:15	13:10:10
	012344aSA	012343aSA	012342 SS	012341 S
	AUG 1.98	AUG 1.98	AUG 1.98	AUG 1.98
	12:55:30	12:55:00	12:35:30	12:25:30

Note: The display can be switched between eight and sixteen thumbnails by setup menu. (See page 28.)

3. Press the button shown below to select page when the cursor is positioned below, if applicable.

LEFT button:	Upper Left Corner
RIGHT button:	Lower Right Corner
UP button:	Upper Column
DOWN button:	Lower Column

Note: Press the  (or ) button for two (2) seconds or more to move the cursor to the record that is skipped number of records forward (or backward) by setting the SKIP# RECORD parameter in the SEARCH/PLAY menu.

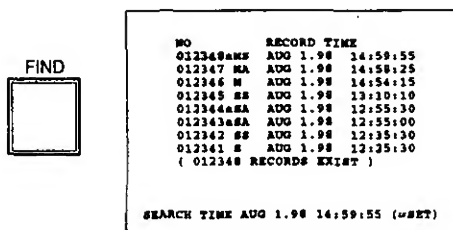
4. Move the cursor to the desired thumbnail to be displayed by pressing the , ,  or  button.
5. Press the **PLAY**  (or ) button to play back the selected record backward (or forward).
6. To display the thumbnail display again, press the **INDEX** button again.
7. To stop playback or release the search function, press the **STOP** button.



● Find by Assigning Directly

This function lets you find the records that is directly assigned the recorded number or recorded date and time.

Note: Confirm that the ALARM REC indicator is not lit. If the indicator is lit, press the ALARM REC STANDBY button to release the alarm record mode.

1. Press the **FIND** button to display the recorded list and the search editing area on the lower of the monitor screen as shown below.



2. Press the  (or ) button to move the cursor to the position to be edited in the search editing area.
3. Select the desired digit or month by pressing the (+) or (-) button.
4. Repeat the procedure 2 and 3 to edit the other positions.
5. Press the **SET** button to play back the assigned record forward, if there is a record as same as setting. Or displays a record list that is included immediate record, if there is not a record same. The immediate record blinks in the list.

6. Press the **SET** button to play back that record forward.
7. To stop playback or release the find function, press the **STOP** button.

Notes:

- While the thumbnails are displayed on the monitor screen, press the **FIND** button to display the thumbnails with the search editing area.
- The search editing area is displayed the contents that is previously set the SEARCH DATA parameter (record number or recorded date and time) in the SEARCH/PLAY menu. But during the procedure 2, press the **FIND** button to toggle the display state in record number and recorded date and time.

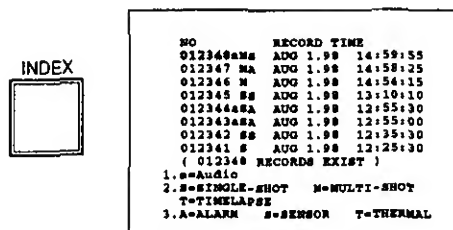
■ Display Denial Function

This recorder can be prohibited to play back the certain record by the others.

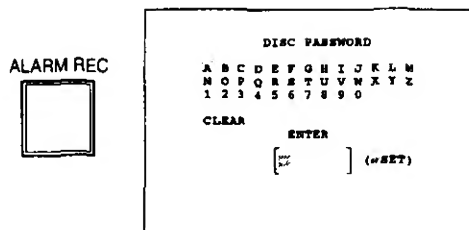
To use this function, you must set the disc password in the LOGICAL FORMAT menu, then identify the password.

Refer to the Disc Password on page 31 for detail settings.

1. Press the **INDEX** button to display the recorded list on the monitor screen as shown below.







2. While the list is displayed on the monitor screen, press the **ALARM REC STANDBY** button. The DISC PASSWORD menu shown below appears.



3. Select the password in the menu, then press the **SET** button to display the setup menu as shown below.

NO	RECORD	TIME
012345	MS	AUG 1.98 14:59:55
012347	MA	AUG 1.98 14:58:25
012346	M	AUG 1.98 14:54:15
012345	SS	AUG 1.98 13:10:10
012344	FA	AUG 1.98 12:55:30
012343	EA	AUG 1.98 12:55:00
012342	SS	AUG 1.98 12:35:30
012341	#	AUG 1.98 12:25:30

HIDE RECORD NO 01238

4. Press the  (or ) button to select next page (or previous page), if applicable.
5. Select the desired record to be hidden on the monitor screen pressing the  or  button.
The selected record blinks on the monitor screen.
6. Press the **SET** button to toggle the display of recorded date and time on and off on the selected record.
It is disabled playback while the display is off, or enabled playback while the display is on.
7. Press the **SET UP/ESC** button for two (2) seconds or more to display the recorded list.
Then press the **STOP** button to return to the normal view.

APPENDIX

● Time Lapse Recording Time

Note: The time lapse recording time changes depending on images to be recorded.

1. Without Audio (In case RECORD PARTITION is 20)

$$\text{Recording time} = \frac{(50390 \times \text{Rate} \times 20)}{(P + 0.0396) \times 3600}$$

Rate: Recording rate (second/frame)
P: Image data size (Refer to the table.)

Image Data Size

Video Pixels	FINE	NORMAL	ROUGH
720 * 480	34	22	14
720 * 240	18	11	8

2. With Audio (In case RECORD PARTITION is 20)

$$\text{Recording time} = \frac{(50390 \times \text{Rate} \times 20)}{(P + A + 0.0396) \times 3600}$$

Rate: Recording rate (second/frame)
P: Image data size (Refer to the table above.)
A: Audio data size
t: 0.03333 (when the video pixels are 720 * 480)
0.01666 (when the video pixels are 720 * 240)
A = int ((Rate - t) x 5.383 + 1)
int: Breakage dismal place

● Number of Records in MULTI SHOT Mode

Note: The number of records in MULTI SHOT mode changes depending on images to be recorded.

1. Without Audio

$$\text{Number of records} = \text{int} \frac{1007950}{(P \times N + \text{int} (1.003 + 0.039 \times N) + 1)}$$

N: Number of record frames
P: Image data size (Refer to the table above.)
int: Breakage dismal place

2. With Audio

$$\text{Number of records to be recorded} = \text{int} \frac{1007950}{(P \times A) \times N + \text{int} (1.003 + 0.039 \times N) + 1}$$

A: Audio data size (Refer to the formula of "A" in Time Lapse Recording Time.)

● Number of Freeze Picture Record Frames

Note: The number of freeze picture records changes depending on images to be recorded in both 1 ch and 2 ch recordings.

1. 1 ch recording (Number of frames)

	Video Pixels	FINE	NORMAL	ROUGH
Without Audio	720 * 480	approx. 28 000	approx. 42 000	approx. 63 000
	720 * 240	approx. 50 000	approx. 77 000	approx. 100 000
With Audio	720 * 480	approx. 17 000	approx. 21 000	approx. 25 000
	720 * 240	approx. 23 000	approx. 28 000	approx. 30 000

2. 2 ch recording (Number of shots)

Note: The number of record frames becomes twice of the number of shots.

	Video Pixels	FINE	NORMAL	ROUGH
Without Audio	720 * 480	approx. 14 000	approx. 21 000	approx. 33 000
	720 * 240	approx. 26 000	approx. 42 000	approx. 56 000
With Audio	720 * 480	approx. 10 000	approx. 14 000	approx. 19 000
	720 * 240	approx. 16 000	approx. 21 000	approx. 24 000

When recording in TIME LAPSE mode Recording time (minutes)

CAPTURE RATE	Video Pixel 720 * 480					
	Audio ON			Audio OFF		
	FINE	NORMAL	ROUGH	FINE	NORMAL	ROUGH
0.03						
0.07	0:31	0:48	1:14	0:32	0:50	1:19
0.10	0:47	1:12	1:51	0:49	1:16	1:59
0.17	1:21	2:03	3:09	1:23	2:09	3:32
0.20	1:35	2:25	3:43	1:38	2:32	3:59
0.33	2:35	3:52	5:49	2:44	4:14	6:38
0.50	3:46	5:35	8:12	4:06	6:21	9:58
1	6:59	9:59	13:58	8:13	12:42	19:56
2	12:25	16:56	22:21	16:26	25:24	39:52
3	16:47	22:04	27:57	24:40	38:06	59:49
4	19:58	25:25	31:04	32:53	50:48	79:45
5	22:55	28:32	34:06	41:07	63:30	99:41
10	31:47	36:48	41:08	82:14	127:01	199:23
15	36:30	40:45	44:11	123:21	190:31	299:05
20	39:25	43:03	45:52	164:28	254:02	398:47
25	41:24	44:33	46:57	205:36	317:32	498:29
30	42:50	45:37	47:42	246:43	381:03	598:11

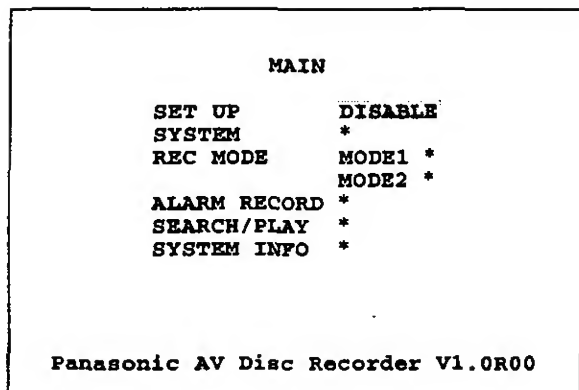
CAPTURE RATE	Video Pixel 720 * 240					
	Audio ON			Audio OFF		
	FINE	NORMAL	ROUGH	FINE	NORMAL	ROUGH
0.03	0:29	0:46	1:01	0:27	0:45	1:02
0.07	0:58	1:33	2:03	1:02	1:41	2:19
0.10	1:28	2:19	3:05	1:33	2:32	3:28
0.17	2:29	3:57	5:15	2:38	4:18	5:55
0.20	2:56	4:39	6:11	3:06	5:04	6:57
0.33	4:39	7:09	9:17	5:10	8:27	11:36
0.50	6:39	9:58	12:40	7:45	12:40	17:24
1	11:38	16:25	19:56	15:31	25:21	34:49
2	19:16	25:24	29:24	31:02	50:42	69:38
3	23:58	29:57	33:32	46:33	76:04	104:27
4	27:58	33:53	37:16	62:04	101:25	139:16
5	31:04	36:47	39:56	77:35	126:47	174:06
10	38:51	43:02	45:07	155:10	253:34	348:12
15	42:23	45:37	47:09	232:46	380:22	522:18
20	44:25	47:02	48:14	310:21	507:09	696:24
25	45:43	47:55	48:55	387:57	633:57	870:31
30	46:38	48:32	49:23	465:32	760:44	1044:37

When the CAPTURE RATE is changed, sometimes the recording time does not change because of internal procedures.

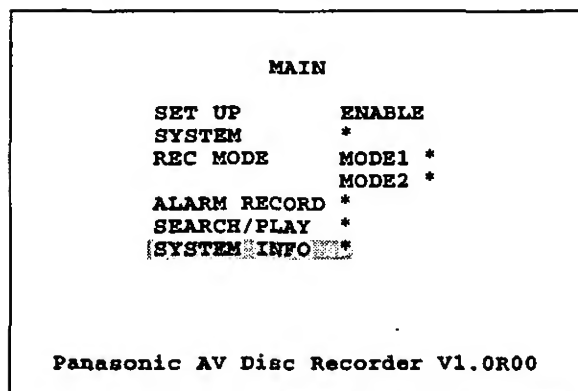
■ Confirm the Passwords

You can confirm the passwords by the procedures below if you need.

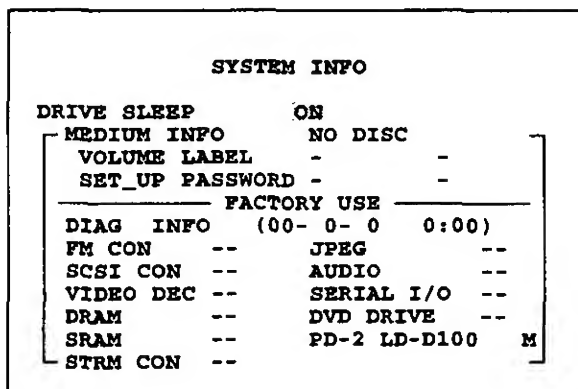
1. Press the **SET UP/ESC** button for 2 seconds or more.
The MAIN menu appears on the monitor screen.



2. Move the cursor to SYSTEM INFO by pressing the or button.



3. Press the **SET** button.
The SYSTEM INFO menu appears on the monitor screen.



4. The desired password appears on the monitor screen for 5 seconds by the following operations:

To confirm the SET UP PASSWORD: Press the and the STOP button simultaneously while the LOCK switch is ON.

To confirm the FORMAT PASSWORD: Press the FORMAT buttons (+ and -) simultaneously while the LOCK switch is ON.

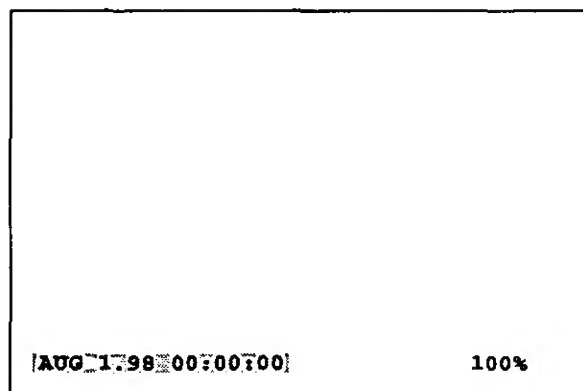
To confirm the DISC PASSWORD: Press the ALARM REC STANDBY button and the REC button simultaneously.

■ All Reset Operation

You can reset the settings to the factory settings.

1. Confirm the POWER switch is OFF.
2. Set the POWER switch to ON while pressing the and buttons simultaneously.

Note: Do not release the and buttons until "AUG 1.98 00:00:00" appears on the bottom left of the monitor screen.



SPECIFICATIONS

General

Power Source:	120 V AC, 60 Hz
Power Consumption:	38 W
Ambient Operating Temperature:	+5°C - +40°C (41°F - 104°F)
Ambient Operating Humidity:	Less than 90 %
Dimensions:	420 (W) x 88 (H) x 350 (D) mm 16-9/16" (W) x 3-7/16" (H) x 13-3/4" (D)
Weight:	7 kg (15.4 lbs.)

Input and Output

Video Input A:	1.0 V[p-p]/75 Ω NTSC Composite Video Signal with 75 Ω Automatic Termination/Looping through (x1) Y Signal; 0.714 V[p-p], C Signal; 0.286 V[p-p]/75 Ω S-video signal (x1)
Video Input B:	1.0 V[p-p]/75 Ω NTSC Composite-Video Signal with 75 Ω Automatic Termination/Looping through (x1)
Video Output:	1.0 V[p-p]/75 Ω NTSC Composite Video Signal (x1) Y Signal; 0.714 V[p-p], C Signal; 0.286 V[p-p]/75 Ω S-video signal (x1)
Audio Input:	47 k Ω unbalanced, RCA standard jack
Audio Output:	600 Ω unbalanced, RCA standard jack
Camera Switching Output:	RCA standard jack
Terminal Board:	Sensor Input: Pulse more than 100 ms Alarm Input: Pulse more than 100 ms Alarm Reset Input: Pulse more than 100 ms Series Record Input: 1 circuit Clock Adjustment Input: Pulse more than 100 ms Alarm Output: Selective by level selector Alarm Recover Output: Pulse 100 ms Buzzer Output: 1 circuit Thermal Error Output: 1 circuit Clock Adjustment Output: Pulse 1 s Series Record Output: 1 circuit
Serial Control Port:	Baud Rate; 2 400 - 115 200 bps, Data Bit; 8, Parity Check; None, Start Bit; 1, Stop Bit; 1, (25-pin D-sub Connector)
Parallel Control:	(25-pin D-sub Connector)

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

STANDARD ACCESSORY

AC Power Cord 1 pc.

Panasonic

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